

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

B52S
Reading

Vol. 8

222138

Washington, D. C., January 29, 1927

7095
92

No. 1 27

GENERAL NOTES

Mr. Henderson has been appointed by the Secretary of Agriculture to be associate chief of the Biological Survey, a new position created in the Bureau on January 1. Having been connected with the Bureau for more than 10 years in the capacity of assistant chief, Mr. Henderson's services have been coextensive with its administration of the migratory-bird treaty act, its expanded work with States in the cooperative control of predatory animals and injurious rodents, and its studies of the migratory and other habits of birds through banding operations. During this period he has become well acquainted with officials enforcing State game and fur laws and has had first-hand opportunity in Alaska to study improvements in the reindeer industry and developments in fur farming in the Territory.

During the middle of January, Mr. Henderson spent several days at the Winona, Minn., office in connection with the administration of the Upper Mississippi River Wild Life and Fish Refuge.

The annual meeting of the Committee on THE SURVEY was held in the editorial office on January 4, with Dr. W. B. Bell, chairman, presiding. Policies for the house-organ, which with this issue is starting its eighth year, were discussed, but no changes in form or in policies were found necessary. It was the consensus of opinion of the Committee that THE SURVEY is supplying a real need in disseminating news of the Bureau's activities to field employees and in preserving a desirable esprit de corps throughout the Survey. Field men especially are urged to continue sending in interesting news notes and also to submit any comments and criticisms that occur to them that would aid in making THE SURVEY an improved organ of service. It was decided at the meeting that notes should hereafter be turned in to the editor on or before the 15th of each month instead of the 20th to make it possible to issue THE SURVEY earlier in the month than heretofore. The Committee for THE SURVEY for 1927 is as follows: Dr. W. B. Bell, chairman, representing Economic Investigations; Mrs. A. B. Morrison, Administrative Offices; Edward A. Preble, Biological Investigations; W. F. Bancroft, Alaska Investigations; E. R. Kalmbach, Food Habits Research; D. Monroe Green, Fur Resources; Lisle Morrison, Game and Bird Reservations; W. R. Dillon, Migratory-Bird Treaty and Lacey Acts; Dr. T. S. Palmer, Importations; W. H. Cheesman, editor; and Paul H. Oehser, assistant editor.

For its exhibit on three phases of wild-life administration--conservation, utilization, and control--the Biological Survey has been awarded a "medal of honor" by the International Jury of Awards of the Sesquicentennial International Exposition held at Philadelphia from June 1 to December 1, 1926. This is the highest award obtainable by a Federal bureau for its work in this exposition. Four other bureaus of the Department and the Office of Exhibits were similarly recognized.

The successful execution of the plans for the exhibit was made possible by the excellent teamwork between field men of the Survey, who furnished part of the raw material for the taxidermists, and the workers in the Washington office, who originated the plans, arranged with taxidermists and artists for illustrating properly the underlying ideas, and supervised the installation of the finished work. The bureau committee in charge of the installation consisted of Lisle Morrison, of the division of game and bird reservations, and W. R. Dillon, of the division of migratory-bird treaty and Lacey Acts.

The story told by the exhibit brought out the need of "conservation" of useful wild birds and mammals, in one section, and consisted of panels portraying big game and birds on Federal reservations, the natural life zones of the continent, and bird-banding operations. A second section, under the caption "utilization," consisted of a shorebird habitat, a duck-hunting scene, and a typical muskrat marsh with the animals and their house in the foreground. The third section, on "control" of wild life, was made up of mounted specimens showing the depredations of wolves, coyotes, and other animals on useful game birds and mammals and on domestic livestock, and the destructiveness of pocket gophers, prairie dogs, and other rodents to crops and forage.

Both the Biological Survey and the Forest Service are to represent the Department with extensive and attractive exhibits at the New England Sportsmen's Show, to be held in Boston, Mass., from January 29 to February 5. International in scope and sponsored by the Massachusetts Fish and Game Protective Association, this exposition aims to portray outdoor life and the appeal that living wild animals make to persons of all ages and classes. It is a revival of and is patterned after the famous sportsmen's shows held in Boston many years ago and will exhibit all available native species of game and fur bearers that test the mettle of hunters and trappers in this country and Canada. This Bureau's exhibit at the Show is substantially the same as that shown at the Sesquicentennial Exposition and was installed under the direction of Mr. Dillon and Mr. Morrison. Mr. Dillon, who was in Boston during the week of January 23 to 29, was assisted by U. S. Game Warden B. E. Smith.

As in previous years, a number of Christmas bird censuses were taken this season by various members of the Bureau. W. L. McAtee and Edward A. Preble, in company with Dr. Alexander Wetmore, of the Smithsonian Institution, made a survey of local bird life on December 23, 1926, in the vicinity of Dogue Creek, near Mount Vernon, Va. Fifty-one species, the largest number yet recorded on a similar trip, and more than 3,000 individuals were observed. E. R. Kalmbach, C. C. Sperry, and F. M. Uhler made a similar bird count in the vicinity of La Plata, Md., on December 26. They saw 49 species and more than 2,000 individuals. Herbert L. Stoddard and Charles O. Handley in Leon County, Fla., on Christmas Day saw 72 species and more than 1,300 individuals. The detailed results of these and other bird censuses taken throughout the country at Christmas time will be published in the January-February number of Bird-Lore.

Dr. T. S. Palmer and F. C. Lincoln were speakers on the program of the 700th regular meeting of the Biological Society of Washington, held at the Cosmos Club on January 15, which took the form of a symposium on the membership and activities of the society. Doctor Palmer spoke on "Early Days of the Society" and Mr. Lincoln on "Our Present Membership." Other speakers of the evening were Dr. L. O. Howard, chief of the Bureau of Entomology, and Dr. Paul Bartsch, of the U. S. National Museum.

The following publications of the Bureau were issued in January:

- "A Biological Survey of North Dakota; I, Physiography and Life Zones; II, The Mammals," by Vernon Bailey. North American Fauna No. 49; received January 8.
- "Rabbit Skins for Fur," by D. Monroe Green. Farmers' Bulletin 1519-F; received January 13.

Radio addresses by members of the Bureau have been delivered as follows:

- Garlough, F. E. "Man and Rodent at War (II)," from Station KGO, San Francisco, Calif., on December 29, 1926.
- Moore, Roy. "Some Hibernating Animals," from Station KSAC, Manhattan, Kans., on December 30, 1926.

Manuscripts have been submitted for outside publication as follows:

- Cox, William T. "The National Wild Life Refuge on the Mississippi."
- Gabrielson, Ira N. "Some Good Rock Plants."
- Goldman, Edward A. "Wild Animals a Scout May Meet."
- Howell, Arthur H. "The Rice Rat in Maryland."
- Kellogg, Remington, and (William K. Gregory). "A Fossil Porpoise from California."
- Lincoln, Frederick C. "A Note on the Longevity of the Pintail (Dafila a. tzitzihoa)."
- Malloch, J. R. "The Hawaiian Species of the Genus Lispocephala Pokorný (Diptera: Anthomyiidae)."
- McAtee, W. L. "Names of Apple Leaf Hoppers," "Birds of the Golf Course: The Chipping Sparrow," "Notes on Insect Inhabitants of Bird Houses" (with description of a new species of Plectops and one of Fannia (Diptera) by J. R. Malloch), "Review of Collinge's 'The Food of Some British Wild Birds'," and "Birds as Distributors of Barberry."

- Nelson, E. W. "The Vanishing Migratory Birds of Our Western Marshes," "Work of Bureau of Biological Survey during the Fiscal Year 1926," and "The Conservation of Wild Life and Forests."
- Preble, Edward A. "April in Nature," "Snowy Owls Come South," and "May in Nature."
- Preble, Edward A., W. L. McAtee, (and A. Wetmore). "Christmas Bird Census (Dogue Creek, Va.)."
- Ransom, Webster H. "Rare Hybrid Goose Taken in Washington State."
- Stoddard, Herbert L., and Charles O. Handley. "Christmas Bird Census (Leon County, Fla.)."

Ernest Thompson Seton, of Greenwich, Conn., visited offices of the Bureau January 13 to 15 in connection with an exhaustive work that he is preparing on the life histories of game animals.

Dana Miller, formerly of the Office of the Secretary, has been appointed auditor in this Bureau. He assumed his new duties on January 3.

BIOLOGICAL INVESTIGATIONS

Dr. H. C. Oberholser made a trip down the Potomac River on January 4 as far as Aquia Creek, Va., in continuation of his studies regarding the numbers and species of ducks frequenting the river during the winter season. He reports seeing about 60,000 ducks on this trip, the species and numbers being about the same as during December. The most noteworthy observations were a great increase in the numbers of mallards, an increase in the numbers of canvasback ducks and Canada geese, the continued abundance of black ducks, and the practical absence of scaup ducks.

A. H. Howell and Charles H. M. Barrett spent from January 6 to 9 on a collecting trip to Nanjemoy Creek, Charles County, Md. Trapping for small mammals resulted in the capture of several interesting species. Three black vultures (Coragyps urubu) were observed, and the species is reported by the residents of the region to occur there regularly in small numbers. Several flocks of wild geese, numbering about 100 altogether, came into the creek to rest each night, departing again shortly after daylight. Several species of ducks, including goldeneyes and mergansers, were observed, but the freezing of the river prevented any collection of these birds.

F. C. Lincoln gave a talk on January 12 before the Fidelis Club, of this Division, on the history of bird-banding and the important results already obtained by this practically new method of scientific investigation, and discussed scientific problems the solution of which might be aided through the application of this method of study.

Dr. W. P. Taylor has prepared a voluminous report stressing the need of increased biological studies in connection with forest and grazing problems. The life histories of both rodents and their bird and mammal enemies are of far-reaching importance in the best development of these essential industrial resources.

Theo. H. Scheffer spent a week early in December visiting a number of bulb growers in western Washington and northwestern Oregon, some of whom have extensive plantations and have reported much damage from pocket gophers, mice, and moles. It is planned to repeat these visits in the spring to check up on the results of repressive measures now being applied. On January 6 Mr. Scheffer attended a convention of game wardens and game commissioners at Seattle, Wash., and on January 7 addressed a meeting of the bulb growers at the Agricultural Experiment Station, at Puyallup.

"A Biological Survey of North Dakota," by Vernon Bailey, was published early in the month as North American Fauna No. 49. This report is in two parts, the first treating of the physiography and life zones of North Dakota, accompanied as in similar reports, by a colored map of the life zones; and the second consisting of notes on the distribution, abundance, and habits of the mammals of the State. Both are based on natural-history explorations by the Biological Survey and cooperating State organizations in North Dakota for many years; the work on the mammals began in 1887. This Fauna will be found a valuable work of reference by natural-history students, biologists, and others interested in the distribution, habits, and economic relations of wild-animal life. A bibliography of 70 titles serves as a supplementary source of information on the subjects and species treated.

Dr. Frank N. Blanchard, of the University of Michigan, visited the office on January 4 after attending the annual meeting of the American Association for the Advancement of Science, at Philadelphia.

George Finlay Simmons, of the Cleveland Museum of Natural History, visited the Survey January 7 to 10 to identify some of the material collected by him on the Blossom expedition, which he conducted to the south Atlantic in 1924-1926.

Percy Viosca, Jr., of the National History Museum, New Orleans, La., called at the office about the middle of January.

ALASKA INVESTIGATIONS

"Percentage Marking of Reindeer" is the title of a mimeographed leaflet (Bi-905) recently issued by the Bureau for use in field work in the Alaska reindeer investigations under the direction of Lawrence J. Palmer, the author. This leaflet has been prepared chiefly for Bureau of Education teachers and missionaries and others in Alaska for the guidance of reindeer herders, and is being distributed through the office of the Reindeer Experiment Station, at Fairbanks, Alaska.

ECONOMIC INVESTIGATIONS

Dr. W. B. Bell left Washington on January 9 to attend meetings of livestock associations in several western States. He gave addresses and took part in discussions with stockmen and others on problems relating to predatory-animal and rodent-control work, game conservation, and other activities of the Bureau affecting their interests. The meetings scheduled were those of the Oregon Woolgrowers Association, at Pendleton, Oreg., on January 14-15; the Idaho Woolgrowers Association, at Weiser, Idaho, January 16-18; The National Woolgrowers Association, at Butte, Mont., January 20-21; and the American National Livestock Association, at Salt Lake City, Utah, January 25-27.

Leo L. Laythe, leader of rodent control in Colorado, writes that it is estimated that there are six million acres in that State infested with prairie dogs and ground squirrels. A normal or average infestation of 10 prairie dogs to the acre means that 60,000,000 of these pests are gnawing away at the prosperity of the State. From results obtained in one of the western States it is further

estimated that these rodents eat on the average 4 ounces of green feed a day. This would aggregate 15,000,000 pounds consumed every day for 200 days a year, or 3,000,000,000 pounds every year. Jack rabbits have an estimated population of ten or twelve million in Colorado, and one of these pests consumes about 8 ounces of food a day. This makes the total consumed by rodents approximately 4,500,000,000 pounds, or 2,250,000 tons of green feed a year. In addition these pests destroy much that they do not eat.

During December Mr. Laythe observed that rats are good fishers. An owner of a commercial fish pond and hatchery northeast of Denver asked for help in controlling rats and reported that these pests evaded all traps he had set for them and would get out on the gates between the ponds and catch fish as they came near by grabbing them by the back of the neck. He stated that one rat had captured a rainbow trout that weighed a pound. The place was treated with poisoned grain and calcium-cynide dust with effective results, as shown by inspection a week later.

Now and then Kansas newspapers report a case of some farmer collecting enough money from rabbit-ear bounties to pay his taxes. Each winter 15 to 20 car-loads of rabbits are bought up at 10 and 15 cents a carcass for shipping to eastern markets. A. E. Oman, leader of rodent control in Kansas, states that shipments last season aggregated about 100,000 rabbits. This winter, fur companies are anxious to buy dried skins, and many farmers are now saving the rabbit skins and feeding the carcasses to hogs and chickens, making three sources of income from these rodents--bounty, meat, and skins.

The 1926 campaign against rats in Kansas was quite successful, with six counties putting on full-week demonstration drives. Mr. Oman and Roy Moore, assistant biological aid, assisted in two or more demonstrations in each of 16 counties. County agents listed 312 demonstrations for the year. The cyanide gun played an important role in the campaign, and a local dealer at Olathe disposed of 150 pounds of cyanide dust. In Doniphan County more than 800 pounds of the dust was handled on a cooperative basis by the local farm bureau.

Predatory-animal work in Oregon during December consisted almost exclusively of establishing new poison stations and rebaiting those previously put out. More than 38,000 specially prepared poison baits were used.

E. M. Mills, junior biologist of this Division, has recently returned from a rodent-control demonstration trip in Wisconsin, where he worked in cooperation with the Extension Service of the University of Wisconsin. He is now engaged in establishing his permanent headquarters at Amherst, Mass. His rodent-control work at Amherst will be in cooperation with the Extension Service of the Massachusetts Agricultural College, and his territory will cover the New England States.

The Biological Survey is cooperating, through western field offices, with California officials in checking an unusual infestation of field mice near Bakersfield, Kern County, Calif., and near-by cities. Poisoned grain sprinkled in newly plowed furrows across the path of their migration is being used successfully in the control of these rodents.

FOOD HABITS RESEARCH

During the calendar year 1926, 1,675/ of birds of about 100 species, 1,197 bird pellets, 86 stomachs of mammals, 176 of reptiles, and 94 of amphibians were examined in the laboratory of this division. Nearly half the bird stomachs were of red-winged blackbirds collected in connection with a study of their food habits in Louisiana. Most of the pellets were of marsh hawks from Georgia, where the food habits of the bird were studied in connection with the cooperative quail investigation. Of the mammal stomachs, about half were of deer from the Kaibab National Forest. Most of the reptiles examined were alligators. The total number of bird stomachs examined during 1926 exceeds by more than 400 the number studied the preceding year.

"Facts About Snakes," (Bi-855), a 9-page mimeographed leaflet, was issued during the month in revised form. This leaflet deals with misconceptions and myths concerning snakes and with methods of their control and eradication. Copies will be furnished by the Biological Survey on request.

FUR RESOURCES

Dr. J. E. Shillinger, of the Bureau of Animal Industry, visited the Experimental Fur Farm at Saratoga Springs, N. Y., during the latter part of December to assist Dr. Karl B. Hanson in making critical tests of tetrachlorethylene for the treatment of hookworms in foxes. Tests were performed on 21 foxes.

"Rabbit Skins for Fur," Farmers' Bulletin No. 1519-F, by D. Monroe Green, was issued on January 13, and copies may be had on request. This bulletin describes methods of handling rabbit skins, from the time the pelt is removed until it reaches the raw-fur market or is tanned for home use, including methods of killing and skinning, stretching, drying and preserving, sorting and grading, marketing, packing and shipping, and tanning. There is also appended a list of the trade names applied to rabbit and hare pelts after they have been prepared for manufacturing purposes.

D. Monroe Green went to Rochester, N. Y., on January 16 to inspect rabbitries and attend the Rochester Rabbit and Poultry Show held there January 17 to 21.

GAME AND BIRD RESERVATIONS

A survey of the boundary line of Lake Malheur Bird Reservation, Oregon, has recently been completed.

A buffalo bull from the herd at Sullys Hill Game Preserve, South Dakota, has been shipped to Duluth, Minn., as a donation to the city zoo at that place.

IMPORTATIONS

A shipment of European hares, consigned to the Woodmont Rod and Gun Club, of Berkeley Springs, W. Va., arrived at New York on December 18 but was not allowed to enter as the animals were consigned to a point not far from important

apple-growing districts. In New York, Massachusetts, and Connecticut, where these hares were introduced several years ago, they have caused enormous losses and have proved a serious menace to orchards. The animals in the present shipment were killed and disposed of for market purposes by the importer.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Representative sportsmen and State game conservation officials from many parts of the country met in the auditorium of the U. S. National Museum on January 20 with officials of the Department to discuss methods by which better protection might be given to migratory wild fowl, particularly ducks and geese. The meeting was presided over by Assistant Secretary R. W. Dunlap, and the introductory statement of the purpose for calling the game conservationists and their representatives together was made by Doctor Nelson. Many requests had been made of the Department that it reduce the bag limits for wild ducks from 25 to 15 and for geese from 8 to 6 for the entire country. Others had suggested that the country be districted with one set of regulations prescribed for the Atlantic Seaboard, another for the area drained by the Mississippi River and its tributaries, and a third for the more arid western region extending across the Rockies to the Pacific coast. Appearing for their constituents from near and distant points, several members of both houses of Congress presented the case from local angles, both for and against changes in the regulations. At the afternoon session representatives of sportsmen's associations, State game commissioners, and individual sportsmen made addresses. The general feeling expressed was against any change in the existing regulations on bag limits, but many felt that the most effective additional protection needed for the birds was a shortening of the open seasons.

Mr. Sheldon left Washington on January 24 for an inspection trip of several weeks. On January 25 he addressed the League of Ohio Sportsmen in convention at Columbus, Ohio, on "Bibological Survey Activities," his talk being illustrated by lantern slides. From Columbus, Mr. Sheldon went to Daytona Beach, Fla., to interview Warden Kelsey. Later he will confer with Wardens Whitehead, Hoffman, Clarkson, Riddick, Perry, and Linebaugh in their respective districts and assist in organizing the spring enforcement work in southern States.

Heavy penalties for hunting ducks during the close season in Missouri still continue. Six offenders, arraigned in Federal court at Hannibal, Mo., on December 6, 1926, were each fined \$100.

Miss Frances B. Pierson has been transferred from the War Department to this Bureau to fill the stenographic position made vacant by the resignation of Miss Eugenia M. Lane. Miss Pierson took up her new duties on January 18.

Cases Terminated -- Reports Received During December

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Meyers**	2	Missouri	Hunting ducks in close season	\$100 each
Barmeier, Mrovka*	2	Missouri	Hunting ducks in close season	\$100 each
Earhart**, Holland*	3	Louisiana	Killing ducks in close season	\$25 each, costs, and 3 months in jail.
Earhart**, Pertuit**, Holland*	1	Louisiana	Selling ducks	\$25
Fleming*, Randall*	2	Indiana	Killing ducks in close season	\$10 each
Foolkes**, Holland*	2	Louisiana	Possessing ducks in close season	\$25 each, costs, and 3 months in jail.
Holland*, Foolkes**	1	Louisiana	Selling ducks	\$50
Kelsey	3	South Dakota	Hunting ducks after sunset	\$25 each
Kelsey, Shaver	1	Missouri	Possessing ducks in close season	\$25
Kelsey, Shaver	1	Missouri	Hunting ducks in close season	\$10
Kelsey, Shaver	1	Missouri	Hunting ducks in close season	\$25
Linebaugh	1	Kentucky	Killing a duck in close season	\$20
Linebaugh, McQuillen**	1	Kentucky	Killing a duck in close season	\$25
Mrovka*	2	Missouri	Hunting ducks in close season	\$100 each
Pingley	1	Maryland	Possessing a duck in close season	\$10 and costs
Riddick	1	Texas	Possessing meadowlarks	\$5
Riddick	3	Texas	Killing robins	\$5 each
Scholler*, Fidler*	2	Illinois	Killing ducks in close season	\$25 and costs of \$15.25 each
Shaver, Kelsey	3	South Dakota	Hunting ducks in close season	\$5 each
Shaver	1	Minnesota	Possessing a duck in close season	\$25
Shaver, Gervais**	1	Minnesota	Possessing 2 wood ducks	\$10
Shaver, Martin**	2	Minnesota	Hunting ducks after sunset	\$5 each
Shaver, Stukel**	2	Minnesota	Shooting ducks after sunset	\$10 each
Steele, Cooney*	2	Iowa	Hunting ducks in close season	\$10 each

* Federal deputy game warden.

** State deputy game warden.

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Charlton, Grause*	1	Kentucky	Shooting coots from a motor boat
Earhart**,Holland*	3	Louisiana	Killing ducks in close season
Earhart**,Pertuit**			
Holland*	1	Louisiana	Selling ducks
Foolkes**,Holland*	2	Louisiana	Possessing ducks in close season
Holland*,Foolkes**	1	Louisiana	Selling ducks

* Federal deputy game warden.

** State deputy game warden.

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

Vol. 8

Washington, D. C., February 28, 1927

No. 2

GENERAL NOTES

Paul G. Redington, assistant chief of the Forest Service, in charge of the branch of public relations, has been named by Secretary Jardine chief of the Biological Survey to succeed Doctor Nelson. The appointment will become effective on May 9. Doctor Nelson will remain in the Bureau as senior biologist and, being relieved of the responsibilities of administrative duties, will devote his entire time to the assembling of information he has gathered and thus round out his work in science.

Mr. Redington has been connected with the Forest Service since 1904, and the lines of work on which he has been engaged both in Washington and in the field have been such as to fit him well for the various activities of the Biological Survey, said Secretary Jardine, in announcing the change, on February 12. Following his appointment in 1904, Mr. Redington was assigned to work in Montana, Wyoming, and Idaho. Appointed forest inspector in 1906, he inspected timber-sale work in Wyoming, Colorado, and Utah. In 1907 he was advanced to the position of inspector, and the following year was transferred to Colorado as associate district forester. From 1911 to 1916 he was supervisor of the Sierra National Forest in California, and from this position was promoted to district forester of the southwestern district, with headquarters in New Mexico. Before returning to forestry work in California in 1919 he was city manager of Albuquerque for a term. For the next five years, as district forester of the California district, he administered the 18 national forests of that State, and one year ago was promoted to assistant forester, with headquarters in Washington.

Mr. Redington is a native of Illinois. He was graduated from Dartmouth College in 1900, and during the years 1902 to 1904 took graduate courses in the Forestry School at Yale University, receiving the degree master of forestry. He was assigned to the staff of the Biological Survey on February 16 as associate chief, and will spend the time prior to May 9 in becoming more familiar with the details of the Bureau's work. He already knows personally many of the field men of the Biological Survey, having come in contact with them in his work in the Forest Service.

W. L. McAtee, in charge of Food Habits Research, has been authorized by the Secretary of Agriculture to go to Europe early in March chiefly to investigate the propagation of migratory waterfowl, largely of the same species as occur in the United States. He will study the methods and equipment used in European countries in game-bird propagation and determine the success that is being had with various species, especially those that have rarely or never been propagated in this country. In addition, he plans to visit laboratories in Budapest, Hungary; Lednice, Czechoslovakia; and York, England, where investiga-

tions of the food habits of birds are being carried on, to learn the methods used and to arrange for possible cooperation in future studies. He will endeavor also to obtain specimens of certain mammals for the Biological Survey's collection, and will cooperate with the Bureau of Entomology in carrying on certain insect studies abroad. Mr. McAtee expects to return to this country in about three months.

The Agricultural Appropriation Bill for the year ending June 30, 1928, as passed by Congress, and approved by the President on January 18, 1927, carries a total appropriation for the Biological Survey of \$1,035,020. Increases amounting to \$52,000 in appropriations were granted, but these are in part offset by a reduction of \$4,345 in one item, making the net increase over current appropriations \$47,655. The increases granted are as follows: \$22,000 for maintenance of reservations, to be used for replacing big-game fences and for fencing an inclosure for antelope on the Wind Cave Game Preserve, South Dakota; \$15,000 for further studies and investigations of the breeding of fur-bearing animals and of their diseases; \$10,000 for the Alaska Game Commission; and \$5,000 for expenses connected with the administration of the Upper Mississippi River Wild Life and Fish Refuge.

Dr. W. P. Taylor, of Biological Investigations, and S. E. Piper, Joseph Keyes, and F. E. Garlough, of Economic Investigations, spent the latter part of January and the first of February in Kern County, Calif., investigating the causes of the mouse plague and the damage in that section, in cooperation with the California State Department of Agriculture. Reports from these men indicate that most of the migrating mice at Buena Vista Lake were house mice and meadow mice and that locally the outbreak was of small economic importance although of some danger to crops. It was of much scientific interest from the standpoint of the causes of the infestation and the diseased condition of the mice. A full report of the investigations in the matter and on the control measures employed is being prepared.

William Frederick Bancroft

William Frederick Bancroft, for 14 years connected with the Biological Survey, died at his residence at Washington, D. C., on February 4, after a brief illness. He was born October 21, 1868, in Illinois, and was educated in the schools of South Dakota. In the latter State he had been editor of daily and weekly newspapers, for 10 years served as postmaster at Wessington Springs, and for 4 years as the first State game warden, holding this position until his appointment in 1913 on the force of the Biological Survey. He was co-author of several Farmers' Bulletins containing annual summaries of the game laws of the United States and Canada from 1913 to 1917, and of annual posters of the Biological Survey showing the open seasons for game. The Federal migratory bird laws were passed after he came to the department, and part of his work was connected with the preparation and enforcement of regulations under these conservation measures. Later he was assigned to work connected with the administration of laws for the protection of game and land fur animals in Alaska and for the improvement of the reindeer herds in the Territory, and devoted part of his time to handling correspondence connected

with mailing lists and the distribution of publications and mimeographed leaflets of the Biological Survey. During the World War he served as captain in the Quartermaster Corps of the Army. He was buried with full military honors in Arlington National Cemetery on February 7.

Manuscripts for outside publication have been submitted as follows:

Bailey, Vernon. "Animal Life of the Carlsbad Cavern."
Cheesman, Wm. H. "Wild-life Conservation Engages Attention of Biological Survey."
Couch, Leo K. "Migrations of the Washington Black-tailed Jack Rabbit."
Day, Albert M. "Magpie Control in Wyoming."
Denmead, Talbott. "Quail Shootin'."
Gabrielson, Ira. N. "The Season," "Squirrel Season is Near," "Some Good Sedums for Northwest Rookeries," and "Ground Covers for Shady Places."
Kellogg, Remington. "Fossil Pinnipeds from California."
Jackson, Hartley E. T. "Review of Yerkes's 'The Mind of a Gorilla'."
Jewett, Stanley G. "Bird Notes from Clark County, Washington" and "Lower Columbia River Bird Life."
Lincoln, Frederick C. "The Status of Totanus flavipes in Arizona" and "Notes on the Migration of Young Common Terns."
McAtee, W. L. "Cicadidae of the Vicinity of Washington, D. C." and "Economic Ornithology."
Mills, E. M. "Gas the Woodchuck," "Rats in the Poultry House," and "How to Destroy Rats."
Oberholser, Harry C. "December and January Birds about Washington, D. C." and "The Migration of North American Birds: The Flickers."
Palmer, T. S. "William Frederick Bancroft."
Preble, Edward A. "Nature Calendar," "The Vanishing Woodcock," and "June in Nature."
Sheldon, H. P. "The Pennsylvania System -- Has It Failed?"
Stephl, O. E. "Prairie Dogs in Montana."
Taylor, Walter P. "The Biological Side of the Business of Forest and Forage Production."

Addresses by members of the Bureau delivered before the Biological Society of Washington during the month were as follows: "Mouse Plagues and How They Happen," by Vernon Bailey, on January 20; "The Personality of Thomas Nuttall," by Dr. T. S. Palmer, on February 12; "The Present Status of Wild Life in Alaska," by Ernest P. Walker, on February 12; and "Conditions Affecting Migratory Waterfowl in Mexico," by E. A. Goldman, on February 26.

By a consolidation of the editorial and publication work of the Bureau following the death of Captain Bancroft, the combined unit is placed under W.H. Cheesman, editor. Mrs. Helen C. Wood has been detailed from the Division of Economic Investigations to care for correspondence and details connected with mailing lists and the distribution of publications and mimeographed information leaflets.

BIOLOGICAL INVESTIGATIONS

In the course of his trip down the Potomac to Widewater, Va., on February 3 to observe the number and species of ducks on the river at this season, Dr. H. C. Oberholser saw comparatively few ducks, only about half as many as he noted on his trip on January 4. All of the species had much decreased in numbers, except the scaup ducks, which had increased.

On February 9, Doctor Oberholser gave an instructive talk before the Fidelis Committee on the general classification of birds. This Committee, composed of the women of the Division, was organized a little over a year ago with the purpose of studying the work of the division and gaining a more comprehensive knowledge of its varied activities and their relation to the Bureau as a whole. Meetings are held semi-monthly, the programs alternating between discussions by members of the Committee of personal attitudes and efficiency in the work, and technical talks by the scientific staff of the Bureau. The present officers of the Fidelis Committee are Mrs. Viola Snyder, chairman, and Miss Ruth Richards, secretary.

ALASKA INVESTIGATIONS

Ernest P. Walker, representative of the Biological Survey on the Alaska Game Commission and executive officer and secretary of the Commission, arrived in Washington from Juneau, Alaska, on February 3, after attending the third annual meeting of the Commission in session at Juneau from January 13 to 25. Mr. Walker brought with him recommendations of the Commission for revised regulations under the Alaska Game Law for the ensuing year, together with estimates for funds needed for the fiscal year 1929, and during his stay conferred with the Chief of Bureau and others regarding Alaska matters. He returned to Alaska late in the month.

H. W. Terhune, chief assistant to Mr. Walker, accompanied him to Washington, chiefly to supply the Bureau with first-hand information regarding his observations in the Aleutian Islands Reservation during the summer. Mr. Terhune left for Alaska on February 12.

Telegraphic reports indicate that Alaska Game Warden Hardy Hallson, operating in the lower Kuskokwim, has had a general roundup of game-law violators in that region and has been successful in all cases. These cases apparently cover prosecutions of aliens who were illegally hunting and trapping, buying furs, and digging out foxes.

ECONOMIC INVESTIGATIONS

Lively interest in rodent control has developed in Pinal County, Ariz., where Ben E. Foster, junior biologist, has been conducting a pocket-gopher eradication campaign, with the active cooperation of the local water users' association, the county farm bureau, and the county agent, in an effort to eradicate pocket gophers from the San Carlos project. Traps were used over 3,000-acre area and over 10 miles of canal. More than 1,200 pocket-gopher tails were turned in as partial evidence of the good work accomplished; 29 pocket gophers were taken from one new fill on the canal.

W. E. Crouch, leader of rodent control in Idaho, writes that the brown rat is found in only a comparatively small area of Idaho. At the present time the rat infestation in Idaho is confined to Latah, Lewis, and Nez Perce Counties and to small portions of Clearwater and Idaho Counties. There is no rat infestation in southern Idaho, although rats are common in the adjoining States of Utah, Oregon, and Washington. Numerous shipments of various commodities are made to southern Idaho from these rat-infested places, by means of which it would be possible for the rodents to spread.

A report was received at the Biological Survey office in Bozeman, Mont., that rats were present in the basement of a women's furnishing store in the business center of the city. An examination showed that the rodents had entered stored boxes of paper and torn some of this into shreds, which, with other debris, they collected and deposited in piles. Trapping operations showed that the damage was being done by native "pack" rats, or wood rats. Apparently these rodents have adapted themselves to living and breeding in basements in the heart of the city some distance from their native habitat, under conditions similar to those where one would expect the house rat.

An interesting development in rodent control this past winter has been the establishment of a market for black-tailed jack-rabbit skins. Through the efforts of Mr. Crouch, two fur companies are maintaining offices in southern Idaho and are paying 40 to 45 cents a pound for thoroughly dried and properly stretched jack-rabbit skins. This means 6 or 7 cents apiece, as it takes 6 or 7 of these skins to make a pound. Mr. Crouch states that there are men in southern Idaho who are putting out poison and collecting and skinning on an average of 250 rabbits a day, which bring a good income for the time spent. About 140,000 skins have been marketed this winter in Idaho. This plan is being followed in several other States where jack rabbits are troublesome.

At a meeting held at Clifton, Tex., last month, representatives from eight central-Texas counties initiated predatory-animal control operations in that section. Losses from predatory animals in these eight counties, it was stated, have aggregated more than \$150,000 a year. A produce dealer and member of the chamber of commerce of Weatherford, Tex., stated that losses in Parker County alone from predatory animals each year could be conservatively estimated at \$35,000.

FOOD HABITS RESEARCH

"To the memory of Professor F. E. L. Beal, the most brilliant economic ornithologist of his day, whose writings have been an incentive and a source of inspiration to all who have followed him, this Work is gratefully and respectfully inscribed by The Author." The foregoing is the dedication to the

second revised and enlarged edition of a work on "The Food of Some British Birds," by Dr. Walter E. Collinge, which has been in process of publication since 1924 and is now completed. Doctor Collinge, a member of the Wild Birds Advisory Committee and keeper of the Yorkshire Museum, undoubtedly must be regarded as the leading European student of economic ornithology. It is very gratifying, therefore, that his most important work has been dedicated to Professor Beal, pioneer in this line of work in the Biological Survey. A photograph of Professor Beal is used as the frontispiece of the book. Professor Beal was on the staff of the Biological Survey almost continuously from 1886 to the day of his death, October 1, 1916.

F. M. Uhler left Washington on February 16 for Sanford, Fla., where he is making a study of the relation of birds to the celery leaf tyer. This work has been undertaken at the request of the State Plant Board, who last year observed birds feeding on the insect.

FUR RESOURCES

Mr. Ashbrook attended the meeting of the Ohio State Fox Breeders Association, held in conjunction with Farmers' Week at the Ohio State University, Columbus, Ohio, during the first week in February. Demonstrations were conducted with live silver foxes and silver-fox pelts to show fox breeders how to determine the qualities of live animals and pelts. Talks were given on association and organization and on sanitation, feeding, and breeding by prominent fur farmers, fur tradesmen, and university professors. Mr. Ashbrook spoke on the present status and future outlook of the silver-fox industry in the United States; also on the work at the Experimental Fur Farm at Saratoga Springs, N.Y.

On February 14 Mr. Ashbrook was in New York City conferring with David C. Mills, of the National Association of the Fur Industry, concerning maps, charts, and graphs that are being prepared to show the distribution and protection of fur animals in the various States.

D. Monroe Green attended the rabbit show of the Rochester Fanciers' Association the latter part of January and gave a talk on the growth of the rabbit industry on the Pacific coast and the manner in which the animals are raised and marketed. The show was the largest held to date, with more than 500 high-quality animals in competition.

As an indication of the interest that is being taken in the rabbit industry, the Biological Survey recently received more than 1,200 inquiries for information within a period of four days.

Dr. Karl B. Hanson reports that 23 pairs of foxes will be mated this season at the Experimental Fur Farm. More martens are being purchased to conduct experiments to determine the breeding date and length of gestation period.

GAME AND BIRD RESERVATIONS

Mr. Golman returned on February 8 from Utah, where he went to meet Assistant Agricultural Engineer L. M. Winsor, of the Bureau of Public Roads, and with his assistance to make a preliminary investigation of conditions bearing upon the location of a proposed dike to impound fresh water and create a Federal bird refuge in and near the delta of Bear River, Great Salt Lake. Ducks in great numbers have died of alkali poisoning during the summer seasons on areas that will be flooded by the proposed dike. In 1924 the salt waters of the lake rising to an unusually high level invaded delta marsh lands that had for years been freshened by river waters. The result was that aquatic vegetation over thousands of acres affording breeding and feeding grounds for migratory waterfowl, especially ducks, was killed. A bill has been introduced in Congress providing for the appropriation of \$350,000 to construct a dike which, if passed, will insure a large supply of fresh water. The refuge if created will greatly reduce or eliminate the alkali poisoning of ducks in that section and increase the acreage of suitable breeding and feeding grounds.

The feeding of hay to the elk at the Elk Refuge, Jackson, Wyo., was begun on January 20, about 10 inches of snow having fallen during a three-day storm and increasing the difficulty of foraging on outside ranges. The latest reports indicate that the elk on the Refuge are in excellent condition. On February 6, more than 5,500 elk were counted on the feeding grounds and about 2,100 in the foothills immediately east and north of the refuge, making a total of more than 7,600 in the immediate vicinity of Jackson. Many of the elk were still far back in the high country, the snow being soft and easily pawed away, exposing good food in the forests.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Mr. Sheldon returned on February 11 from Ohio and southern States, where he conferred with Wardens Charlton, Kelsey, Hoffman, and Clarkson and spent several days with each warden going over his territory with him. Mr. Sheldon also visited the office of the Florida Department of Game and Fresh-water Fish, at Tallahassee, and talked with the Alabama Commissioner of the Department of Game and Fisheries, at Montgomery.

The New England Sportsmen's Show, held in Boston January 29 to February 5, at which the Biological Survey had an exhibit on the conservation, utilization, and control of wild life, was a pronounced success, reports W. R. Dillon who installed the exhibit of this Bureau, assisted by U. S. Game Warden B. E. Smith, of Portland, Me. The show was probably the largest of its kind ever held in the East. Thousands of persons attended each day and evening, and much favorable comment was heard on the exhibits of this Bureau. Practically all the New England States, many of the Canadian Provinces, and the larger railroads had exhibits, and in addition, many commercial exhibitors displayed guns, fishing tackle, motor boats and outboard motors, canoes, and other material employed by sportsmen. Nothing was permitted to be sold at the show.

While en route to Boston, Mr. Dillon attended the National Motor Boat Show in New York City on January 22, where he made a study of new types of motor boats and engines and consulted with numerous officials of concerns manufacturing motors and motor boats. During the past few years the Bureau has been procuring additional boats from time to time, particularly for use in the enforcement of the migratory-bird treaty act, and the information gained by Mr. Dillon at the show will be of value in the further purchase of boats. Motor boats are still needed by many of the U. S. game wardens for enforcement work.

Talbott Denmead, W. R. Dillon, and F. P. Callaghan were in Norfolk, Va., on February 7 and 8 obtaining facts for the Bureau concerning the killing of two alleged violators of the migratory-bird treaty act and the Virginia State game law, in connection with which United States Game Warden W. L. Birsch has been held with two Virginia State game wardens. The shooting occurred on the shore of Back Bay, near Norfolk, Va., on the night of February 4. The men killed are said to have opened fire on the wardens when being placed under arrest, and the wardens are said to have returned the fire in self-defense. After a hearing at Norfolk on February 8, the coroner found in his verdict that the two men had died as a result of wounds from a shotgun in the hands of one of the State wardens when in company with the other State warden and Federal Warden Birsch. The matter will be presented to the grand jury of Princess Anne County when it convenes in March.

Warden Orin D. Steele reports that on January 20 he saw a flock of 6 doves about 2 miles south of Neola, Iowa, and that he has received a report of a flock of 3 doves seen near Glenwood, Iowa, this winter. It is rather unusual for doves to spend the winter in that section.

A drive against motor-boat shooters on Lake Okeechobee, Fla., made on January 9 by Federal Warden J. V. Kelsey, assisted by State Deputy Warden Ross Winne, resulted in the apprehension of 16 violators.

Cases Terminated -- Reports Received During January

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Creech*, Ferrier*	1	Missouri	Hunting ducks in close season	\$10
Foolkes**	1	Louisiana	Killing night herons	\$25
Linebaugh	1	Tennessee	Hunting coots from a motor boat	\$25
Linebaugh, Lynn*	1	"	Killing a goose in close season	\$25
Shaver, Punshon**, Ott**	1	Missouri	Hunting ducks in close season	\$25
Shaver, Schroer*	1	"	Hunting ducks in close season	\$10
Whitehead	3	Georgia	Killing doves in close season	\$5 each
"	3	"	Killing doves in close season	\$30 each
Whitehead, Hartley**	1	"	Killing doves in close season	\$1
Whitehead, Newsom**	1	"	Possessing doves in close season	\$5

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Linebaugh	1	Tennessee	Hunting coots from a motor boat
Linebaugh, Lynn*	1	"	Killing a goose in close season
Richarme**	1	Louisiana	Killing a killdeer

* U. S. Deputy Game Warden

** Deputy State Game Warden

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

1.9
B 525
Vol. 8

Washington, D. C., March 30, 1927

No. 3

GENERAL NOTES

Doctor Nelson is visiting a number of bird reservations in southeastern States gathering information regarding conditions on them.

Mr. Redington and Mr. Sheldon went to New York, New Jersey, and points in New England during the latter part of March to interview sportsmen and State game officials regarding migratory-bird treaty act matters. Mr. Redington also visited the Experimental Fur Farm at Saratoga Springs, N. Y.

Under recent changes that took effect on March 1, Dr. W. B. Bell has been placed in charge of the Division of Biological Investigations. Dr. H. H. T. Jackson has been placed in charge of the Biological Survey's collection of mammals in the National Museum, where he will be enabled to devote his entire time to research, the care of the collection, and the preparation of reports for publication.

C. F. M. Swynnerton, chief of the game preservation department of Tanganyika Territory, visited offices of the Bureau during the week of March 7.

The problem of preventing starvation among the Jackson Hole elk herd in Wyoming in bad winters was discussed at a four-day conference held in Washington early in March. The commission, called together by the Secretary of War, chairman of the President's National Conference on Outdoor Recreation, was a unit in believing that the tragedy resulting from the starvation of great numbers of elk in severe winters must stop, and accordingly directed its efforts to that end and adopted a comprehensive set of recommendations. It was determined that the optimum number of elk to be maintained should not exceed 20,000 and agreed that the present winter feed for the elk is insufficient during hard winters for the herd that it is desirable to maintain. It was recommended that the Federal Government acquire certain lands, which, if added to the Winter Elk Refuge and adjacent property of the Izaak Walton League, would provide feed to carry the elk through bad winters.

An immediate count of the elk in the southern Yellowstone herd was recommended and has already been started under the direction of the supervisor of the Teton National Forest, the game warden of the Biological Survey at Jackson Hole, and a representative of the Wyoming State Game and Fish Commission. Proposal was also made that the Biological Survey conduct an investigation of the life history of the elk and of conditions bearing upon their maintenance in suitable numbers, and that an advisory board, made up of representatives of the State Game Commission, the Forest Service, the Biological Survey, and local stockmen's and ranchers' associations, meet each year at

Jackson to review existing conditions and to recommend such steps as should be taken to promote the welfare of the elk. It was urged that the Wyoming Game and Fish Commission be given wide latitude in regulating hunting and authority to remove by killing and disposal for economic use any surplus that might remain after hunting. A complete program for the handling of the elk herd will be published within the next few months.

The Biological Survey was represented at the meeting by E. A. Goldman; the Forest Service by Will C. Barnes, and the American Society of Mammalogists by Dr. T. S. Palmer. Other individuals and organizations represented were the Boone and Crockett Club, Governor Emerson of Wyoming, ranchers of Jackson Hole, Dude Ranchers' Association, National Park Service, General Land Office, Izaak Walton League of America, Camp Fire Club of America, American Game Protective Association, and the National Conference on Outdoor Recreation.

A few days previous to the meeting of the Elk Commission, the Senate passed a resolution authorizing the acceptance of a gift of about 1,760 acres in Teton County, Wyo., to be known as the Izaak Walton League addition to the Winter Elk Refuge. This enlargement of the refuge area will aid greatly in providing additional food for the elk in winter. The purchase price of the land thus generously given by the Izaak Walton League was raised by popular subscription.

The following publications of the Bureau were received in March:

- "Critical Tests of Tetrachlorethylene as an Anthelmintic for Foxes," by Dr. Karl B. Hanson, Journal of Agricultural Research, vol. 34, no. 2, pp. 129-136 (Q-5), January, 1927. Received in Department, February 17.
- "Propagation of Game Birds," by W. L. McAtee. Farmers' Bulletin No. 1521-F. Received, March 7.
- "How to Attract Birds in the East Central States," by W. L. McAtee. Farmers' Bulletin No. 912-F. Revised, August, 1926; received March 8, 1927.
- "How to Attract Birds in the Middle Atlantic States," by W. L. McAtee. Farmers' Bulletin No. 844-F. Revised, August, 1926; received, March 11, 1927.
- "Raising Domestic Rabbits," by D. Monroe Green. Leaflet No. 4. Received, March 21.

Manuscripts have been submitted for outside publication as follows:

- Cox, W. T. "Forestry for Game as Well as Timber."
- Buchanan, L. L. "Synonymical Notes on Several Otiorhynchid Weevils (Coleoptera)."
- Gabrielson, Ira N. "Oregon Wild Flowers in the Garden," "Who Owns the Earth?"
- "The Original Timber Consumer," "Cougar Hunting in Oregon," "Oregon's Most Unique Plant," and "Some Notes on the Habits and Behavior of the Porcupine (*Erethizon epizanthum*)."
- Gillham, C. E. "Wolf Control in Illinois."
- Hanson, Karl B. "Tetrachlorethylene, a New Remedy for Hookworms in Foxes."
- Jackson, Hartley H. T. "Review of Schmoer's 'Our Greatest Mountain'."
- Lincoln, Frederick C. "The Military Use of the Homing Pigeon."
- Nelson, E. W. "The Saving and Upbuilding of the Migratory Wild Fowl Supply in California and Other Western States."
- Preble, Edward A. "Nature Calendar: May" and "July in Nature."
- Taylor, Walter P. "Review of Farrow's 'Plant Life on East Anglian Heaths, etc.'"
- Walker, Ernest P. "True Economic Status of the Alaska Bald Eagle."
- Whitehead, L. C. "Activities of Bureau of Biological Survey in Controlling Rodent Pests in Texas."

BIOLOGICAL INVESTIGATIONS

On the evening of March 12, Doctor Bell addressed the Biological Society of Washington on "Some Biological Relationships and Their Significance."

During the past few weeks, Dr. H. C. Oberholser made two trips down the Potomac for the purpose of observing the waterfowl; the first on February 23 and the second on March 16. On the first date the number of ducks had greatly decreased from what it had been a month previous, although the canvasbacks fairly held their numbers. Nine species of ducks were observed, a total of approximately 38,000, as well as about 100 whistling swans and a few Canada geese.

On March 16, the canvasbacks had almost disappeared, scarcely more than 1,000 being noted, but the lesser scaup ducks had greatly increased, and considerably more than 50,000 were observed. Between 65,000 and 70,000 individuals of twelve species of ducks were noted on this day, including the rare old-squaw. Also 15 whistling swans and 8 Canada geese were seen.

At the monthly meeting of the Fidelis Club on March 9, Doctor Bell gave a short talk on the work of the Division, stressing the need of careful planning and cooperation. E. A. Preble followed with a general talk on Life Zones, reviewing briefly the history of the subject and some of the primary causes of the dispersal of plants and animals on the earth. Special emphasis was laid on the various zones represented in North America, and some of the characteristic species of each were mentioned. The matter of associations, which are considered to be minor distribution areas that go to make up the broader belts commonly called zones, was also briefly discussed.

Dr. W. P. Taylor spent the early part of February preparing his report on the relation of porcupines to the forest. On Arbor Day, February 11, he delivered an address at the Roosevelt School, at Tucson, Ariz. On February 12 and 25, he made biological investigations on the Santa Rita Range Reserve in connection with the proposed program of investigation of the bio-ecology of forage production, to be participated in by the Biological Survey, the University of Arizona, the Carnegie Institution of Washington, and the Forest Service. The plans involve a comprehensive study of the part played by all forms of wild life, as well as by soil and climate, in the development of the vegetation.

Theo. H. Scheffer, during most of February, gave considerable attention to the relation of moles, mice, and pocket gophers to the bulb-growing industry, which is fast developing into an important agricultural pursuit in the west-coast region. During the early days of March he began observations on ground squirrels near Prosser and Kennewick, Wash.

ALASKA INVESTIGATIONS

The following comment on the Alaska Game Commission is quoted from an editorial in the February issue of the "Alaska Fisherman," a periodical published at Ketchikan, Alaska:

"This commission although a Washington Bureau, camouflaged "Alaskan" by having four members thereon appointed from Washington, is a very splendid body of men. We have been before them and for a time in daily contact with its members, and we have been impressed with their desire to improve fur and game culture for the benefit of Alaska. . . . They are a fine bunch of men--benevolent tyrants perhaps--but a fine bunch of men nevertheless."

President Coolidge, by Executive order of February 21, has set aside certain areas along the Alaska Railroad as preserves and breeding grounds for muskrats and beavers, and a tract of 14 square miles about the Government hotel at Curry, Alaska, which is also on the railroad, as a refuge for the protection of wild birds and game and fur-bearing animals. In the area at Curry fishing will be regulated by the Secretary of Commerce; and the hunting and trapping of birds and game and fur-bearing animals, other than brown and grizzly bears, wolves, and wolverenes, will be permitted only under regulations prescribed by the Secretary of Agriculture, in accordance with the Alaska game law.

The muskrat and beaver preserve along the Alaska Railroad consists of 8 tracts aggregating 6 square miles and designated at especially suitable places for muskrats and beavers over more than 200 miles of the railroad. Trapping or otherwise killing these fur animals on the preserve is unlawful except under rules and regulations to be prescribed by the Secretary of Agriculture, but the taking of such other animals and birds there as is permitted under the Alaska game law is not restricted by the new order.

Beavers have been active in building dams in the vicinity of the hotel at Curry, and these have proved attractive to visitors and tourists. Because of their accessibility, these places have been attractive also to trappers, who had started killing both beavers and muskrats for their pelts. The Executive order was issued to prevent the extermination of the fur animals along the line of the railroad.

ECONOMIC INVESTIGATIONS

Doctor Fisher attended the annual dinner and subsequent meeting of the New York Association for the Protection of Game, held at New York City on March 14. This association was the first one of its kind established, and has done much, especially in the earlier periods, in having game and song-bird protective legislation passed. The evening discussion was confined mainly to the conservation of waterfowl.

At the request of the farm bureau and the county agent of Graham County, Ariz., Isaac Rogers, rodent specialist, has carried out a valuable pocket-gopher-control demonstration near Safford, Ariz., over a 558-acre tract that included six farms. Each farmer provided the necessary help to trap all the pocket gophers on his place, and Mr. Rogers furnished traps and showed the farmers how to place them properly. As a result, more than

1,700 pocket gophers were caught at a cost of 6 cents a gopher, or 18 cents an acre, estimating each farmer's time at \$2.50 a day. A two-year program for clearing the entire district of pocket gophers is now planned, which will involve the financial assistance of local water companies and the county board of supervisors. In the meantime, the demonstration has aroused interest among farmers and merchants to such a degree that they are offering cash prizes to 100 boy scouts who signed up for a pocket-gopher-catching contest. The Biological Survey office loaned the scouts 600 traps and gave instructions as to the proper methods of placing them. Young pocket gophers have been reported in the Yuma district during each month since last October. In the northern States these rodents have only one litter a year.

D. D. Green, junior biologist in the Colorado district, has supervised the treating of 23,000 acres against prairie dogs on the ranch of ex-Governor Sweet in the vicinity of Fountain, Colo. Mr. Sweet had offered 10 cents an acre to contracting parties to clear his ranch of the pests, but the work was accomplished under the supervision of the Biological Survey for approximately \$700, or 3 cents an acre. A striking instance of the tenacity with which SSB poison remains effective under various conditions was shown on this piece of work. In one case a dead prairie dog was found on ground that had been treated 18 days previously. The poisoned grain had been covered with 7 inches of snow, which had melted before the animal picked up the grain. In a similar case the poison had been exposed 9 days before.

James Silver and E. M. Mills, of the eastern rodent-control district, have started an investigation with a view to controlling injury to young orchards by deer in New England and other eastern States. Claims against the State for reimbursement for damage caused in Massachusetts alone amounted to \$15,000 in the past year. Deer injury represents a serious problem of many orchardists and has recently caused the complete abandonment of two large young orchards and has prevented the development of orcharding in otherwise favorable sections. Practical control of their damage without injury or without curtailing the numbers of these valuable game animals is badly needed, and suggestions of possible means of accomplishing this will be greatly appreciated.

Stanley G. Jewett, leader of predatory-animal control in Oregon, is planning to organize a force of eight hunters in an intensive campaign against coyotes between the Deschutes River in the western and the Blue Mountains in the eastern part of the State. It is believed that a thorough clean-up can be made over that part of Oregon during the present spring months.

Two-hundred and fifty deer were noted recently in one day's ride over one of the hunter's lines in Colorado. The animals were on the winter range between West Elk and Soap Creeks and were in excellent condition. The area in question is near the Gunnison Forest boundary and south of the Gunnison Game Refuge. The hunter working this section reported that no predatory animals were molesting these deer.

More than five tons of bait has been distributed in Yakima County, Washington, this winter for orchard mice. A county-wide ground-squirrel campaign will be conducted in Columbia County this summer by the Columbia County farm bureau. This is the first time for a number of years that ground squirrels have been thick enough to cause any alarm. Two districts in southwestern Whitman County will start control measures this spring after a lapse of 10 years.

More than 450,000 pounds of poisoned bait and about 20,000 pounds of calcium cyanide were employed to fight rodent pests in Idaho during the past year, according to W. E. Crouch, State rodent-control leader. The 1926 war on rodents was the most active ever waged in the State. The poisoned bait figure represents an increase of 60,000 pounds over that used in any previous year, and 400,000 more acres than ever before were involved--the poison was applied in approximately 3,000,000 acres of land during the year. The rodent-control office continued its plan of buying strychnine and saccharine directly from the manufacturers and distributed them at cost to cooperators. Under this arrangement more than 32,000 ounces of strychnine and 3,000 ounces of saccharine were supplied for work in private lands, the saving involved being approximately \$20,000.

FOOD HABITS RESEARCH

Mr. McAtee sailed from Hoboken on his European trip on March 9 on the steamer President Roosevelt. He will be in Europe about three months investigating the propagation there of migratory waterfowl.

F. M. Uhler reports conspicuous work on the part of birds in attacking the celery tyer in the celery areas of east-central Florida. Swallows especially are doing commendable work in catching the adult insects on the wing.

"Propagation of Game Birds," Farmers' Bulletin No. 1521, by W. L. McAtee, came off the press on March 7, and copies are available for free distribution. This bulletin applies primarily to the ring-necked pheasant, the bobwhite quail, the mallard duck, and the Canada goose, species with which most success has been had on American game farms. Hungarian partridges, fancy pheasants, native grouse, wild turkeys, and swans--birds that have been reared less extensively--also are dealt with. It is pointed out that the possibilities of game-bird propagation have long been recognized, both abroad and in this country, and that enough has been accomplished to prove that increase in the extent of successful game farming is limited only by the area, the expenditure, and the effort devoted to it. Many methods that assure success are known, and these are treated concisely in the new publication.

FUR RESOURCES

An attractive 32-page book entitled "Our Furry Friends," by Robert Watson, of Hudson's Bay Fur Company, Winnipeg, Canada, and Frank G. Ashbrook, has been prepared for distribution among boys and girls by the National Association of the Fur Industry in cooperation with the Biological Survey and the Office of Cooperative Extension Work. This book is purely educational in nature and is an attempt to arouse the interest of the youth all over this country in fur animals and to teach them that these animals represent a great natural resource. The book is illustrated in two colors with drawings of our chief fur bearers. Copies may be obtained free from the National Association of the Fur Industry, 242 West 30th Street, New York City.

Dr. Karl B. Hanson, during the first of March was in the Middle West conferring with Dr. Robert G. Green of the University of Minnesota, at St. Paul, and Dr. A. A. Leibold of the Straub Laboratories, at Chicago, Ill., who are cooperating with the Department in fox-distemper work.

"Raising Domestic Rabbits," Leaflet No. 4, by D. Monroe Green, was issued on March 21, and copies may be had on request. This leaflet, which supersedes the mimeographed pamphlet Bi-904, treats concisely practices in marketing rabbits, in the management and organization of rabbitries, and in breeding and feeding these animals, and describes the different breeds and varieties. Several recipes for cooking rabbit meat are also given.

GAME AND BIRD RESERVATIONS

The State of Arizona, in cooperation with the Forest Service and with the approval of the Biological Survey, liberated 23 elk on the Campbell Blue River, within the Blue Range State Game Refuge on the Apache National Forest, on February 11. This refuge is in a high mountain area formerly occupied by native elk that became extinct about 1898, when the last one was killed near Mount Ord.

Almer P. Nelson, warden of the Elk Refuge, Wyoming, was in Washington several days early in the month attending the meetings of the Elk Commission. A. C. McCain, supervisor of the Teton National Forest, Wyoming, who also attended the meetings, was a visitor at the Bureau during the month.

The band of antelope at Wind Cave Preserve, South Dakota, has survived for two years without loss and now numbers 19 head; all are in good condition.

Wild turkeys liberated on Niobrara Reservation, Nebraska, a couple of years ago have established some friendly and some unfriendly relations with domestic birds belonging to farmers in the vicinity. One domestic gobbler experienced the "call of the wild" and deserted its home to remain with the wild bunch and can not be recalled. In another instance

a wild gobbler visited a farmyard, perhaps looking for recruits for its band, and engaged in combat with the farmer's gobblers, much to the discredit of the domestic birds over which it was easily victorious.

A small band of nine mule deer, which have been fed alfalfa hay and oats in an inclosure at the National Bison Range, Montana, have dug into and practically cleaned up a small stack of sage-brush hay (Artemisia frigida) cut for antelope two years ago. Both elk and deer on the Bison Range, in addition to the sages, browse heavily in winter on rabbit brush (Chrysothamnus nausiosus), which is eaten little, if at all, in summer. These bitter-tasting brushes may supply something that the animals crave in winter. A little sage-brush hay occasionally would likely be appreciated by deer, elk, or antelope closely confined in city parks, and suggests a possible paying crop for homestead lands.

The carcasses of two bull elk, with antlers locked, the result of a battle sometime during last breeding season, were found recently on the Bison Range.

Wesley D. Parker, warden of Sullys Hill Game Preserve, North Dakota, reports that one horned owl and two goshawks were seen on the preserve and two large black eagles were twice seen flying over during February. Six of the ten wild geese at the preserve have paired off.

The water at Big Lake Refuge, Arkansas, recently reached a higher stage than at any time in the past 15 years, but the levees around Big Lake have stood the strain. Warden L. L. Bryan reports that the water was 4 feet deep in his cabin on the refuge, and 6 feet in the boat shed.

Warden George M. Benson, of Lake Malheur Bird Refuge, Oregon, reports that ducks and geese were coming into the refuge during February and becoming more plentiful each day. Bluebirds made their appearance around the station and thousands of swans arrived.

Eighty-three returns from 499 ducks, mostly mallards, banded on the Bison Range last fall, have been received from Montana, Idaho, California, Oregon, Washington, Utah, Wyoming, and Nevada, in the order named. Fifty-six per cent of the ducks banded and 66 per cent of those killed were males.

Mrs. Alice Randall Hicks has been reinstated in the Government Service and appointed stenographer in the Winona office. Miss Aletha M. Gerlach and Miss Velma V. Kins have received probationary appointments as stenographers in the same office.

IMPORTATIONS

The first shipments of Mexican quail this season arrived at Laredo, Tex., on February 15; at Eagle Pass on February 21; and at Brownsville on March 4. The total number of birds brought in at these three ports up to March 5 was 27,643. Most of the birds imported so far have been shipped

to southern States, including Alabama, Florida, Georgia, Maryland, Mississippi, Oklahoma, and Texas, but a few small shipments have been made to New York and Pennsylvania.

H. S. Swarth, inspector of foreign birds and mammals at San Francisco, Calif., is now located at the California Academy of Sciences, Golden Gate Park, San Francisco. He was appointed curator of mammals and birds at the Academy effective March 1.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Talbott Denmead visited Norfolk, Va., on February 28 where he conferred with a United States district attorney, Federal Warden W. L. Birsch, and others relative to migratory-bird treaty act work. On February 15, Mr. Denmead addressed the Federation of Republican Women of Baltimore, Md., at the Union League, Baltimore, on "The Migratory-Bird Treaty Act."

Wardens Albert Stadlmeir and Moody Creighton brought the motor boat Canvasback from Norfolk, Va., to Washington, D. C., the first of the month. This boat has been used in patrol work on Back Bay, Va., for the past several months under the supervision of Warden Birsch.

The grand jury for Princess Anne County, Va., on March 1 brought in a true bill charging first-degree murder against Federal Warden Birsch and State Game Wardens Mercer and Capps in connection with the killing of two alleged violators of the migratory-bird treaty act and the Virginia game law on February 4, 1927. The wardens are still at liberty, the amount of their previous bond of \$5,000 not having been increased.

Cases Terminated -- Reports Received During February

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Clark*, Earhart**	3	Louisiana	Killing doves in close season	\$5 each and costs
Holmes, Bunney**	1	Nebraska	Killed a goose in close season	\$10
Shaver, Beals**	2	Minnesota	Hunting ducks in close season	\$10 each
Shaver, Gieske**	1	Minnesota	Possessing a goose in close season	\$10
Shaver, Hahan**	1	Minnesota	Killing ducks after sunset	\$5
Whitehead	2	Georgia	Killing doves in close season	\$10 each

* Federal deputy game warden.

** State deputy game warden.

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier	1	Missouri	Killing ducks in close season
Barmeier, Creech*, Ferrier*	1	"	Shooting at a grebe
Barmeier, Riedinger*	3	Illinois	Shooting at ducks from a motor boat
" "	1	"	Killed a loon
Birsch, Curling**, Mercer**	1	Virginia	Killing a wood duck
Bloxsom	1	Maryland	Killing dowitchers, sandpipers, and knots
"	1	Virginia	Trapping and selling ducks
"	1	"	Killing ducks from a motor boat
Bloxsom, Nottingham**	1	"	Trapping ducks
Clark*, Earhart**	3	Louisiana	Killing doves in close season
Clarkson	1	Texas	Possessing a loon
Creech*, Ferrier*	3	Missouri	Hunting ducks from a motor boat
Creech*, Riedinger*	1	"	Hunting ducks from a motor boat
Faircloth**, Whitehead	2	Georgia	Hunting mourning doves in close season
Hilliard	2	New Jersey	Killing wood ducks
Hilliard, Pierce*	1	" "	Killing a night heron
" "	4	" "	Hunting ducks after sunset
Hoffman, Brown*	3	Alabama	Killing coots and ducks from a motor boat
Kelsey, Winne**	2	Florida	Hunting ducks from a motor boat
King*, Whitehead	2	S. Carolina	Killing wood ducks
" "	1	Georgia	Selling ducks
Linebaugh	2	Tennessee	Possessing a swan
Riddick	5	Oklahoma	Killing geese from a motor boat
"	1	Arkansas	Killing a swan
Riddick, Gannaway*	1	"	Possessing a blue heron
Riedinger*	1	Missouri	Killing ducks from a motor boat
Roahen	1	Maryland	Killing black-bellied plovers
Shaver	1	Minnesota	Selling ducks
Smith	1	Maine	Shooting at scoters in close season and selling ducks
"	2	"	Killing eider ducks
Smith*, Rutherford*, Hicks*	1	Minnesota	Shooting at ducks from a motor boat
Steele	1	Washington	Possessing pileated woodpecker recently killed
Steele, Tonkin	14	California	Killing ducks in close season
Steele, Tonkin, Barnes*	16	"	Hunting ducks in close season
Tonkin	5	"	Hunting ducks after sunset
"	1	"	Killing geese in close season
Tonkin, Johnson**	2	"	Hunting ducks prior to half hour of sunrise
" "	1	"	Hunting ducks after sunset
Whitehead,	1	Florida	Killing ducks from a motor boat

* Federal deputy game warden.

** State deputy game warden.

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

Vol. 8

washington, D. C., April 30, 1927

No. 4

GENERAL NOTES

Doctor Nelson returned on April 26 from southeastern States, where he has been visiting various bird reservations of the Bureau and the headquarters of the cooperative quail investigation in Georgia.

Mr. Redington recently returned from a trip to Illinois, Wisconsin, and Minnesota. At Chicago he attended the sessions of the annual convention of the Izaak Walton League of America. He states that the league passed a resolution favoring the passage of the migratory-bird refuge bill and that its members seemed to be interested in many problems of the Bureau. At Madison he conferred with Governor Zimmerman on conservation matters and also with Dean Russell, of the University of Wisconsin, and with Aldo Leopold, associate director of the Forest Products Laboratory. At St. Paul he visited the State fish and game and forest officials. He spent one day at the headquarters office of the Upper Mississippi River Wild Life and Fish Refuge, at Winona, Minn., where he met the members of Superintendent Cox's staff and gained information concerning the activities of which Mr. Cox is in charge.

At the ninth annual meeting of the American Society of Mammalogists, which was held at the Academy of Natural Sciences, Philadelphia, Pa., April 26 to 30, members of the Biological Survey presented papers as follows: Vernon Bailey, on "Notes on a Tame Woodemuck," "Does the Opossum Hibernate?" and "Progress in Beaver Culture"; Dr. W. B. Bell, on "A Research Problem for Mammalogists"; E. A. Goldman, on "Fluctuation of Mammal Populations in Numbers"; A. Brazier Howell, on "Commercial Aspects of Our Whale Fisheries"; A. H. Howell, on "Habits and Distribution of the Florida Wood Rat"; Dr. E. H. T. Jackson, on "Notes on the Swimming Habits of the Water Shrew" and "The Weight of the Smallest Mammal"; Remington Kellogg, on "The Question of Sight in Whales"; Dr. T. S. Palmer, on "Notes on the Literature of the Elk"; and E. A. Preble, on "Shall we Exterminate Our Fur Bearers?" Other members of the Bureau who attended sessions of the meeting were Dr. E. W. Nelson, Paul G. Redington, F. L. Uhler, and Mrs. Jane S. Elliott. Doctor Bell also attended sessions of the convention of the American Philosophical Society, held in Philadelphia during the same period.

At the meeting of the Biological Society of Washington held on the evening of April 23, F. C. Lincoln spoke on "Flight Lines of Ducks," Dr. T. S. Palmer on "Intensive Bird Study in the Suburbs of Large Cities," and A. H. Howell on "Some Recent Bird Notes from Florida."

Ernest P. Walker, who has been executive officer, fiscal agent, and secretary of the Alaska Game Commission at Juneau since its establishment in 1925, in his capacity of chief resident representative of the Biological Survey, will be transferred to the Washington office of the Bureau on or about June 1 as assistant to E. A. Goldman in charge of the Division of Game and Bird Reservations. Mr. Walker will still be in touch with the Alaska game and fur regulations, the issuance of permits for taking specimens of game animals in the Territory, and the leasing of Alaska islands for grazing and fur farming, as these matters will head up in the Reservations Division. Lisle Morrison, formerly assistant in this division, will have charge of the Bureau's exhibit and photographic work and of work in connection with the distribution of publications and mimeographed information leaflets, and requisitions for job printing.

Stanley P. Young, an employee of the Biological Survey since 1920 and for several years leader of predatory-animal control on Colorado, stationed at Denver, has also been transferred to the Washington office as assistant to Dr. A. K. Fisher in the Division of Economic Investigations to fill the position recently made vacant by the placing of Dr. W. B. Bell in charge of Biological Investigations. Mr. Young will take up his new duties on May 1.

Dr. John C. Phillips, of Wenham, Mass., visited offices of the Bureau on April 15.

The following publications of the Bureau were issued in April:

- "Laws and Regulations Relating to Game, Land Fur-bearing Animals, and Bird in Alaska," Alaska Game Commission Circular No. 3. Issued April 2.
- "The Purpose of Bird Censuses and How to Take them," by Ray Trencher Cooke. Department Circular No. 261. Revised March, 1927; Received April 16.

Manuscripts have been submitted for outside publication as follows:

- Bailey, Vernon. "The Great Gray Whistler."
- Dennerd, Talbott. "Yellowlegs" and "The Susquehanna Flats--- Public Shooting Ground."
- Gabrielson, Ira H. "Bird Notes from the Lake Francis Region of Southern Minnesota," "Rodents in Relation to Walnut and Filbert Orchards," "The Real Value of Some Rock Plants," and "The Season; Birds of the Oregon District."
- Mills, E. M. "Moles and Their Control."
- Murie, O. J. "Notes on the Alaska Chickadee."
- Oberholser, Harry C. "February and March Birds about Washington, D. C." "The Protection of Migratory Birds, and "Drainage a Menace to Wild Fowl."
- Proble, Edward A. "August in Nature."
- Silver, James. "Ridding the Farm of Woodchucks" and "Badger Activities in Prairie-dog Control."
- Ransom, Webster H. "A Loquacious Long-lived Lagpie."

BIOLOGICAL INVESTIGATIONS

Edward Rasmussen, of the Utah predatory-animal control district, reports the results of a brief winter investigation of conditions affecting the deer on the Kaibab National Forest in northern Arizona that has just been completed in continuation of studies of the Kaibab deer problem that have been in progress since 1922 under the direction of the Biological Survey, in cooperation with the Forest Service and the National Park Service. The investigation indicates that the deer are forced to feed largely on sage brush and juniper, on account of the overgrazed condition of their range. On the winter range on the eastern side of the Kaibab Plateau the deer seemed to be in fairly good condition, but on the western side, where there is a greater concentration of the animals, they were found much emaciated. Within a comparatively small area 23 dead deer were found, most of which had died of starvation though some might have been killed by predatory animals. A large number of fawns known to have been born last summer have already died of starvation, and this probably accounts in some measure for the lack of increase in the herds during the year. The investigations have revealed, reports Mr. Rasmussen, that there are more deer on the range than the available forage will support and that unless many of the animals are removed the greater part of the feed there will be killed out. The deer are now concentrated on the winter ranges along the basal slopes of the Kaibab Plateau, the higher part of which at this season is deeply covered with snow. A few hundred of the deer are killed each autumn under the State law, whereas it is recommended that thousands be removed to prevent the destruction of the forage for all that would support reasonable numbers. This destruction has now progressed until all forest reproduction is threatened.

Dr. H. C. Oberholser addressed a combined meeting of the Naturalists' Field Club and the Departments of Botany and Zoology of the University of Pennsylvania, at Philadelphia, on March 28 on bird migration. On the following morning he delivered a short address on the protection of birds at the William Penn High School. Plans were formulated, with the cooperation of local naturalists, to gather data on the movements and numbers of migrating wild fowl.

On the evening of March 28, Dr. T. S. Palmer, Dr. H. C. Oberholser, Vernon Bailey, and Miss May T. Cooke attended the meeting of the Alexandria Audubon Society, at Alexandria, Va. Mr. Bailey gave a brief talk on mouse plagues and their causes and on methods of control. Doctor Oberholser followed with remarks on the value of our predatory birds and the pernicious system of paying bounties on hawks and owls, and Doctor Palmer gave a brief outline of the history of bird and game protection in the State of Virginia. The meeting was held in the auditorium of the new George Mason Hotel and attended by about 200 enthusiastic members and friends of the local Audubon Society.

During March Doctor Oberholser made three trips down the Potomac River from Washington to Widewater, Va., to observe the numbers of waterfowl. The maximum number of ducks observed this year was seen on March 16, when it was estimated that there were about 67,000, mostly lesser scaup and black ducks, the canvasbacks being greatly reduced from the numbers seen in February. On March 21 the ducks had decreased to about 45,000, with the same species predominant. On March 30 there was a further reduction to about 40,000, with comparatively few ducks of any species except the lesser scaup. Whistling swans were last seen on March 16, and Canada geese on March 21. Thirteen species of ducks were noted during the month.

Dr. W. P. Taylor, at Tucson, Ariz., gave a number of addresses before local organizations during the month on the mouse plague in Kern County, Calif. He reports that he has been invited by the president of the American Ecological Society to serve on a committee to study the time of appearance of animals in spring and its relation to environment.

Theo. H. Scheffer has been making special studies of ground squirrels and pocket mice at Prosser, Kennewick, and Lind, Wash. On April 1, he addressed the Natural History Club at Pullman on rodent damage and control.

ALASKA INVESTIGATIONS

Revised regulations relating to game animals, land fur-bearing animals, and birds in Alaska, recently adopted by the Secretary after recommendation by the Alaska Game Commission and approval by the Biological Survey, become effective in the Territory on July 1. Only such changes were made in the previous regulations under the Alaska game law as seemed necessary to meet changing conditions and to correct defects. Although all the changes are important in certain areas, only the following are of general interest:

The caribou season in the northern part of fur district No. 2 now opens on August 1 instead of September 1, ending on December 31 as heretofore.

The period September 1 to June 20 is fixed as the open season on black bear in fur district No. 2, but in the southern portion of the district a bag limit of two during the month of September is prescribed. This change lengthens the season approximately 7 weeks in the southern portion of the district by permitting black bears to be taken during September and as late as the 20th of June. The open season in that area was formerly October 1 to May 31.

An important provision opens an area in south-central Alaska to beaver trapping during the month of April, with a seasonal bag limit of 10 to each trapper.

In nine small areas adjacent to the Alaska Railroad the taking of fur-bearing animals and game is prohibited. These areas, by Executive order of February 21, 1927, were set aside as preserves and breeding grounds

especially for beavers and muskrats, in order to retain them as attractions to travelers along the line of the railroad.

By a recent change in the migratory-bird treaty-act regulations, a continuous close season for two years is placed on greater and lesser yellowlegs both in the several States and Alaska, and on April 23 the Secretary amended the Alaska regulations to conform with this change. The complete text of the revised Alaska regulations including maps showing the districts and the text of the Alaska game law (Alaska Game Commission Circular No. 3) will be available for distribution early in May.

The following account of the launching of the Beaver, the new patrol boat of the Alaska Game Commission, is quoted from the Seattle (Wash.) Times of April 12:

"The patrol boat Beaver, building for the Alaska Game Commission for service on the Yukon River and tributaries, will be sent down the ways at 4 o'clock tomorrow afternoon. The vessel will be christened by Mrs. Kenneth Talmage, wife of Captain Talmage of the United States Biological Survey, assisted by her two sons, Jackie, 2 years old, and Charlie, 9 years old. The Beaver will be shipped by steamship to Seaward and then will go over the Alaska Railroad to Fairbanks, where she will be launched again, this time into the Yukon River. At the launching tomorrow afternoon . . . the Beaver will be christened with Yukon River water sent to Seattle from Fairbanks. The Beaver is a tunnel stern river boat, 43 feet long. She will be launched with her pilot house 'knocked down' so she can be shipped by water and rail to Fairbanks."

"The Importance of Preventing Forest, Brush, Grass, and Tundra Fires for the Welfare of Alaska Wild Life" is the title of a mimeographed leaflet by Ernest P. Walker recently issued by the Alaska Game Commission in connection with the observance of American Forest Week (April 24-30). The circular calls attention to the devastating effects of forest fires on the small animals that are food for fur bearers and to the destruction of large numbers of larger game animals and fur bearers, as well as to the effect of fires on soil, vegetation, and forage production. Alaska has such a large percentage of lands useless for the production of any crops other than fur and game and for reindeer grazing, it is stated, that it behooves her to keep such lands well clothed with vegetation and stocked with all the fur and game animals and birds that the lands can support.

Recent cases of violation of the Alaska game law successfully terminated in the U. S. Commissioner's Court at Fairbanks have been reported to the Alaska Game Commission at Juneau by Warden Frank Dufresne: On March 28, an alien was fined \$200 for illegal hunting and \$250 more for dealing in furs without an alien fur-dealer license. Another alien on March 31 was fined \$150 for trapping without an alien license and \$150 for dealing in furs without an alien fur-dealer license.

ECONOMIC INVESTIGATIONS

During the recent poisoning operations against mice in the Buena Vista Lake bottom, Calif., several American short-eared owls were found killed by poison but not by poisoned grain direct. Stomach examinations revealed that the birds had swallowed the entire head of a kangaroo rat, the cheek pouches of which were loaded with poisoned grain. The poisoning crew found more than 30 nests on the ground among the high weeds and a few in the corn stubble. These averaged eight eggs to the nest, some of which were already hatched, the little chicks apparently doing well. Coyotes and coyote signs were plentiful both on the lake and near-by territory, and the crew commonly saw one to four of these animals each day. One was observed being worried by a raven, apparently to the great delight of the bird. None of these animals were found poisoned.

O. E. Steph1, leader of rodent control in Montana, reports some results of experimentation in the laboratory with poison-bait formulas. He has discontinued the use of rolled oats bait, except for mice, and his poisoned grain for Columbian ground squirrels is now made of whole oats and of borax and petrolatum oil, instead of glycerine. Mr. Steph1 expects more favorable results this year on Columbian ground squirrels than ever before and is arranging to have a satisfactory brand of petrolatum oil available at all county seats and other places where poisoned grain is being prepared in large quantities. The use of whole oats, borax, and petrolatum oil is a result of experiments conducted by Stanley E. Piper and Mr. Steph1 during the past three seasons.

More strychnine has been used in Montana in rodent-control work this season than ever before. More than 11,000 ounces have been purchased through the Bureau's cooperative arrangement.

An interesting feature of the recent work of A. W. Moore, junior biologist in the Oregon district, was the trapping of 14 pocket gophers (Thomomys douglasii oregonus) in Clackamas County, on the grounds of a bulb company. Some of the bulbs were eaten by the rodents and some carried by them around to storehouses and the varieties mixed. One pocket gopher was estimated by the owner of the tulip farm to have done \$50 worth of damage before it was trapped.

The cooperative rat-control work with the city of Portland, Oreg., is giving increased satisfaction. One feature of note occurred during March: In some places in lawns and gardens rats had been digging up from below, and neither poisoning nor gassing had any permanent effect. It was suspected that breaks in the sewers were responsible for these conditions, but it was not until this month that an opportunity came to excavate and ascertain the real trouble. In one lawn there were seven distinct openings, all of which led to a large break in the sewer leading from a house to the main sewer in the street. Repairs were made and no trouble has occurred since.

To Hunter Alva Stone belongs the credit of taking the first litter of coyote pups from a den this year in the Oregon district. On March 24 he dug out a den containing 11 pups and shot the female. Hunter Edgar Watkins poisoned a cougar in March. He is one of the few men who have succeeded in poisoning one of these animals.

A female coyote, possibly 5 or 6 years old, killed on March 20 by Hunter Glenn Correll near Spangle, Spokane County, Wash., was found when skinned to have a wire collar grown fast into its neck. The wire had evidently been placed on the animal when a pup and had broken through the skin almost entirely around the neck, but the sore had healed as the coyote grew. The scalp of the animal was sent to the Washington office.

FOOD HABITS RESEARCH

Latest information from Mr. McAtee is that he is for a short time at Wien, Austria, engaged in entomological research work, which is part of his mission in Europe.

F. M. Uhler has returned from Florida, where he spent about a month studying the relation of birds to the celery tyeer. He is now engaged in the examination of the material collected on this trip.

FUR RESOURCES

Mr. Ashbrook visited the Experimental Fur Farm at Saratoga Springs, N. Y., on March 22 and 23 to confer with Dr. Karl B. Hanson regarding plans for construction work to be started there this spring.

D. Monroe Green, accompanied by Dr. Benjamin Schwartz, a parasitologist of the Bureau of Animal Industry, visited Johns Hopkins University, at Baltimore, Md., on March 23, to observe the investigational work being done there on rabbit diseases and to obtain information on coccidiosis and snuffles. During the early part of April Mr. Green was in New York City, where he visited raw-fur receiving houses and wholesale markets that handle rabbit meat. From New York he went to the Experimental Fur Farm to inspect the rabbit-breeding work and to assist Doctor Hanson in carding information on breeding, feeding, and slaughter records pertaining to rabbits. On April 12 he visited the Bussey Institution, at Boston, Mass., and conferred with scientists who for a number of years have been conducting experiments in color inheritance of rabbits;

Doctor Hanson, who is in charge of the Experimental Fur Farm, at Saratoga Springs, N. Y., arrived in Washington April 25 for a conference with Bureau officials regarding the future work of the farm. He reports that 33 fox pups and about 70 young rabbits have been produced at the farm this spring.

GAME AND BIRD RESERVATIONS

A count of the Jackson Hole, Wyo., elk herd was made between February 10 and 22, in order to have the figures available for consideration by the Elk Commission, which met on February 28; but on account of unfavorable conditions an accurate count was not obtained. The elk were still widely scattered and many were in the timber, where they could not readily be found, and during part of the time stormy weather also interfered. Under these conditions, however, 17,049 elk were counted. A later and, it is believed, practically accurate count was completed on March 27 by members of the Biological Survey, the Forest Service, and the State Game Commission of Wyoming, accompanied by representatives of the Izaak Walton League of America. Reports of this count show that the herd now numbers 19,238, a total only slightly different from the figures resulting from a count taken two years ago. At the time of the present count nearly half of the elk were on the feeding grounds of the Elk Refuge.

That the herds are still within the 20,000 limit set by the recent Elk Commission as an optimum number came as some surprise. In a disastrous winter seven years ago thousands of elk died from starvation, leaving a year later a remnant of only 9,346, as noted in a count then made under the same auspices as the one just completed. A doubling of the numbers between 1921 and 1925, when the count showed 19,483, suggested that a continued increase might be expected, especially since recent winters have been more favorable to the animals. Unexpected results like these call for a thorough investigation of all conditions affecting the welfare of the herds in the whole Yellowstone region, and the Bureau is formulating plans for beginning the work. Information will be assembled regarding all factors that affect fluctuations in the numbers of the elk.

The southern Yellowstone elk in winter migrate for the most part to the vicinity of Jackson, Wyo., but about 300 have recently been reported west of the Tetons in Idaho, and there is some intermingling eastward in Wyoming with herds along the Wind and Green Rivers, which may account for the apparent lack of increase in the numbers about Jackson. The elk in Jackson Hole are still staying on the feeding grounds during the day, but in the evening and during the night they scatter out to the foothills and meadows, where forage is available, since recent warm weather has melted the snow there.

Mallard ducks making their winter headquarters on the Bison Range, Mont., prove able to adapt themselves to changed conditions when their natural food supply of plants and weed seed is not available. Many acres of wheat and corn on the Flathead area are gleaned by the birds for grain left in the field. A year ago, in February, when some short crops were unharvested, it was common to see a thousand or more mallards burrowing through a foot of snow in zero weather for food. This winter, with less grain left in the fields, they visited stacked and shocked grain and even self feeders in hog lots, and in one instance took a ton of ground wheat

from two feeders at the slaughterhouse at Ronan, Mont., between Tuesday noon and Friday night.

Between 400 and 500 buffalo were gathered into the feeding pens on the Bison Range by the warden and two assistants on the afternoon of March 22. The animals will be confined and fed alfalfa hay for approximately two months, in order to reduce grazing on the open range during the early growing season of the principal forage plants. Studies conducted by the Forest Service indicate that a 50-per-cent reduction in animals grazing during the early growing period sufficiently increases plant production to permit more than normal grazing during the remainder of the year. With spring feeding, it is possible, without serious injury to the forage, to carry over the big game on the Bison Range, which are now in excess of its capacity, until suitable reductions can be made.

Warden Frank H. Rose, of the Bison Range, who also has supervision over Nine Pipe Bird Reservation, Mont., reports that he visited the refuge on the evening of March 20 and observed between 90 and 100 swans, and about 3,000 ducks on the lake. He recognized mallards, American goldeneyes, pintails, and redheads, and observed also about 50 coots and 20 snow geese, as well as killdeers, crows, meadowlarks, grebes, gulls, and various other species not definitely identified. Killdeers were the only shorebirds seen. Warden Rose gave a talk on birds to the pupils of the High School at Moiese, Mont., on March 24.

According to reports from Supervisor L. E. Hibbard, of Lake Malheur Bird Reservation, Oreg., conditions there are improving every day, and there is a splendid comeback of birds, especially geese, probably due to the wet season in that locality. Warden George M. Benson reports that there seem to be more birds on the refuge than for several years. U. S. Game Warden Ray C. Steele visited Lake Malheur in March.

Reports from Warden L. L. Bryan, of Big Lake Reservation, Ark., state that the floods in that region have caused breaks in the levees on both sides of the reservation. Attempts to stop the breaks with sand bags were unsuccessful. In a letter of April 20 he says: "The water is rising very fast and all the levees have given way. The water is backing up into the town and will get to the first floor of all the houses. I have bought a roll of coarse wire to wire the boat shed and the warden house to trees to keep from floating away. The boat shed is all under except the coaming of the top, and there is 6 feet of water in the house on the reservation."

George M. Wilson, warden of Belle Fourche Bird Reservation, S. Dak., reports that there has been the lightest flight of game birds in that region in a number of years. An unusually light flight of geese has occurred, and few remained at the refuge this season.

John A. Murphy has been appointed senior legal assistant to Stanley B. Hall, attorney in the Winona, Minn., office.

IMPORTATIONS

Among the importations for which permits were issued during the month were 70 penguins from South America and 3 copper pheasants from Japan.

Shipments of quail from Mexico have continued steadily since February 15, and the total number imported up to April 2 was 68,103, the largest number of Mexican quail ever imported to the United States in one season. The birds were shipped to several States, but the largest numbers were consigned to Oklahoma, Alabama, Illinois, Kentucky, and Texas. Each of these States received 5,000 or more.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Amendments to the regulations under the migratory-bird treaty act were adopted by Secretary Jardine and approved by the President on April 4, 1927. During the next hunting season it will be unlawful to take more than 4 woodcock a day (instead of 6 as formerly), and the only shore-birds that may be hunted during the seasons 1927 and 1928 are jacksnipe and woodcock, a two-year close season now being prescribed for greater and lesser yellowlegs. No changes are made in existing regulations affecting the length of seasons or size of bag limits on ducks and geese.

The use of sinkboxes on inland waters is prohibited, but on coastal waters they may be used under restrictions that provide that each one must be at least 700 yards from any shore, island, or other sinkbox. The use of motor boats and airplanes to drive and rally ducks to keep them moving, and thus provide better shooting, is prohibited under the new regulations.

Local changes in the regulations affect the dates of open seasons for hunting wild fowl in the five northern counties of Idaho. There the season is made earlier to harmonize with that in Montana, as the two areas are climatically similar. The new season on wild fowl in Boundary, Bonner, Kootenai, Benewah, and Shoshone Counties, Idaho, is from September 16 to December 31. An amendment to the regulations approved by the President on April 21 provides an open season from October 1 to January 15 on waterfowl in California.

More than 5,150,000 hunting licenses were taken out during the season 1925-26 by sportsmen throughout the United States, including Alaska, and the revenue to State treasuries amounted to more than \$6,800,000. Although data are lacking from four States, detailed figures for the season compiled by the Bureau show increases in the numbers of licenses issued and fees received over the two years preceding. In the 1923-24 season, the licenses numbered 4,395,038 and the fees paid were \$5,594,982. One year later 4,904,740 hunters paid for their licenses a total of \$6,190,863.94. Pennsylvania with 525,045 licenses and fees of \$646,467.25 headed the list both

in licenses and returns to the State treasury. Ohio was second with 361,098 licenses sold, and New York third with a sale of 339,147 licenses.

Warden B. J. Shaver was ill for several days recently with the flu, but at this writing has so far recovered as to be able to take up again his official duties.

Apropos of the item which appeared in the February issue of THE SURVEY concerning Warden O. D. Steele's report of two flocks of doves wintering in Iowa this year, Warden W. H. Ransom has written that he saw 4 mourning doves in one flock in Walla Walla County, Wash., on January 14, 1927, one other mourning dove in the same county on January 16, and another in Benton County, Wash., on January 20. Mr. Ransom says these birds were the first mourning doves he had seen in his district -- eastern Washington, western Montana, and Idaho--since he saw two in Asotin County, Wash., on January 3, 1924, and all were seen during near-zero weather. Mourning doves do not commonly winter in eastern Washington, according to Warden Ransom.

Warden K. F. Roahen, of Peoria, Ill., in a letter of April 4 states that "There is one of the largest flights of bluebills and other small ducks here now that have been seen for years. The lakes are simply black with them."

Warden P. K. Hilliard, of Atlantic City, N. J., reports that on March 10 he saw the first white brant he had ever seen, although he had heard of that species being in that section when he was a boy.

The following is quoted from weekly report of Warden Harry Barmeier, of St. Louis, Mo., for the period March 1 to 5: "The ducks are with us by the thousands; wherever there is a lake, river, creek, ditch, or slush there are ducks, and many seem to hang right in the cornfields. It is as I have reported in former years; the flights are more overland than along the larger rivers, and this central-western Missouri flight is the main one through Missouri. Ducks are reported along the Mississippi but not in such quantities as we see them out here."

A recurrence of the malady responsible for the death of so many wild fowl in the Northwest appeared at Malheur and Lower Klamath Lakes recently. On April 6 Warden Tonkin and Deputy Warden Barnes visited the Government Sump about 10 miles south of Klamath Falls, Oreg., where they counted 52 dead ducks on the shore. Eleven dead mudhens and three gulls also were found. From 60 to 70 percent of the dead ducks were buffleheads, the remainder being ruddy ducks, with the exception of one ringneck. The disease, the cause of which has not been definitely determined, was also prevalent among the nesting birds, of which there are thousands in the Lower Klamath and Tule Lake areas. Latest advices are to the effect that with the arrival of cooler weather evidences of the disease disappeared.

Federal Game Warden Z. G. Forbes operating on Currituck Sound, N. C., on December 23, 1926, apprehended two persons who were violating the migratory-bird treaty act by hunting wild geese at night. These two defendants were arraigned in Federal court at Elizabeth City, N. C., on April 4, 1927, and on pleas of guilty fines of \$100 each were assessed. The court on this occasion stated that a jail sentence would be meted out in all future cases involving the "firelighting" of migratory waterfowl. The successful prosecution of these cases and the warning given by the court will doubtless result in improved conditions on Currituck Sound and vicinity.

The use of motor boats in hunting migratory wild fowl continues and generally results in substantial fines in Federal courts. Two offenders charged with killing coots from a motor boat were arraigned in Federal court for the eastern district of Kentucky on April 4, 1927, and on pleas of guilty were required to pay a fine of \$50 each, together with costs of \$20.50 each.

For hunting wild ducks during the close season an offender arraigned in Federal court for the eastern district of Missouri recently paid a fine of \$50. These cases were obtained by Federal Deputy Game Wardens S. Creech and W. A. Ferrier.

The cases of the State of Illinois against Lane Brothers, involving the assaults upon Federal Game Wardens Roahen and Charlton on March 3, 1925, were called for trial at Virginia, Ill., on March 28. J. P. Wenchel, an attorney of the Solicitor's office of this Department, assisted in the prosecution. The trial of the case based on the indictment charging assault with intent to kill Warden Roahen consumed a day and a half, but as the prosecution was unable in its evidence positively to identify any of the assailants the case was nolle prossed. The other case, based on the alleged assault of Warden Charlton, was continued and an effort made to obtain additional evidence, but without success, so that case also was nolle prossed.

Cases Terminated -- Reports Received During March

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Creech*, Ferrier*	1	Missouri	Killing a grebe	\$10
Brown*	1	North Dakota	Possessing a goose in close season	\$5
Charlton, Grause**	2	Kentucky	Killing coot from a motor boat	\$50 and costs of \$20.50 each
Creech*, Ferrier*	1	Missouri	Hunting ducks in close season	\$50
Foolkes*, Holland*	1	Louisiana	Possessing a duck in close season	\$25 and 3 months suspended jail sentence
Forbes	2	North Carolina	Hunting ducks at night	\$100 each
Holland*, Fagot**, Schreiber**	1	Louisiana	Possessing ducks in storage in close season	\$25
Lemoine**, Holland*	1	"	Possessing a coot in close season	\$25
Linebaugh	1	Kentucky	Hunting ducks in close season	\$25
Linebaugh	1	Tennessee	Killing a crane	\$10
"	1	"	Offering a crane for sale	\$10
Ransom, Ham**	2	Washington	Possessing ducks in close season	\$10
Riddick	1	Texas	Killing sandpipers	\$1
Riddick, Cannaway*	1	Arkansas	Killing a heron	\$10
Riddick, Harris*	1	"	Possessing a duck in close season	\$10
Shaver, Beals**	1	Minnesota	Hunting ducks after sunset	\$10
Shaver, Beals**	1	"	Hunting ducks after sunset and shooting at a bittern	\$30
Tonkin	1	Nevada	Possessing a dove in close season	\$20

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Mrovka*, Ferrier*	2	Missouri	Killing ducks in close season
Birsch, Parker*	5	North Carolina	Hunting geese after sunset
Birsch, Parker*, Mercer**	3	Virginia	Hunting ducks after sunset
Bloxsom, Bonniwell**	2	"	Hunting ducks in close season
Bloxsom, White**, Collins**	2	Maryland	Selling ducks
Charlton	1	Ohio	Possessing a bittern
"	1	"	Possessing 2 blue herons and 1 bittern
Charlton, Grause**	1	Kentucky	Killing a coot from a motor boat
Charlton, Hinton**	1	Ohio	Possessing a whistling swan
Clarkson	1	Texas	Possessing 3 sandpipers and 1 willet
"	1.	Texas	Possessing jacksnipe and ducks in close season
Clarkson, Estes*	1	"	Possessing 2 meadowlarks
Creighton*, Stadlmeir*	2	Virginia	Hunting ducks after sunset
" "	3	Maryland	Killing ducks from a motor boat
Farnham, Hilliard	1	Pennsylvania	Possessing woodcock in storage in close season
" "	3	"	Possessing ducks in storage in close season
" "	2	"	Possessing geese in storage in close season
Forbes	2	North Carolina	Hunting ducks at night
Holland*, Fagot**, Schreiber**	1	Louisiana	Possessing ducks in storage in close season
Kelsey, Winne**	30	Florida	Hunting ducks from a motor boat
" "	8	"	Hunting coots from a motor boat
Lemoine**, Holland*	1	Louisiana	Possessing a coot in close season
Linebaugh	1	Kentucky	Hunting ducks in close season
"	2	Tennessee	Hunting doves in close season
"	1	"	Possessing a crane
"	1	"	Offering a crane for sale
Linebaugh, Finley**, Williams**	1	"	Possessing a dead gull and a heron
Mestel*	2	Illinois	Hunting ducks after sunset
Mushbach, Steele	6	Washington	Hunting ducks after sunset
Parker*	1	North Carolina	Shooting at ducks from a motor boat
Perry	2	Mississippi	Possessing ducks in storage in close season
Ransom, Fenstermaker**	1	Washington	Hunting ducks after sunset
Ransom, Hill**	2	Montana	Possessing ducks in storage in close season
Riddick	1	Arkansas	Selling wild ducks
Riddick, Thomason**	1	"	Killing ducks prior to 1/2 hour of sunrise

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Riddick, Thomason**	1	Arkansas	Possessing meadowlarks
Riddick, Harris*, Thomason**	2	"	Possessing meadowlarks
Roahen	1	Illinois	Possessing ducks in storage in close season
"	1	"	Shooting at ducks after sunset
Roahen, Fidler*	1	"	Killed a duck after sunset
Roahen, Scholler*	1	"	Possessing ducks in close season
Shaver	6	Minnesota	Hunting ducks after sunset
Shaver, Beals*	7	"	Killing ducks after sunset
Smith, Seaman**	1	Massachusetts	Hunting ducks in close season
Smith, Wallace*	1	Maine	Hunting geese in close season
Steele	4	Washington	Hunting ducks after sunset
Tonkin	5	California	Hunting ducks after sunset
Tonkin, Hobson**, Hobson**	2	"	Hunting ducks after sunset
Tonkin, Post**	2	"	Possessing ducks in close season
Tonkin, Steele, Barnes*	7	"	Hunting ducks in close season
Tonkin, Thompson*, Hammack**	1	"	Killing a swan
Walz*	1	Arkansas	Shooting coots from a motor boat
"	1	"	Killing a heron
Whitehead	1	Georgia	Possessing a great blue heron
Whitehead, Berley**	2	South Carolina	Possessing wood ducks
Whitehead, King*	1	" "	Hunting ducks after sunset

* Federal deputy game warden.

** State deputy game warden.

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

Vol. 8

Washington, D. C., May 31, 1927

No. 5

May 9, 1927.

To the Members of the Biological Survey:

The Secretary of Agriculture has accorded me the honor of designating me as Chief of the Biological Survey in succession to Dr. E. W. Nelson, who for the past four decades has been a member of the Survey, and since 1916 its leader.

I appreciate that probably no man could be found whose feet would measurably occupy Dr. Nelson's shoes. Backed by a half-century's experience in dealing with wild-life matters on the North American continent; urged on by a strong and sincere impulse to work without stint for the welfare of the beneficial mammals and birds of the land; and anxious to make the work of the Biological Survey better known to the people of the United States, he has established a reputation in the fields of mammalogy, ornithology, and game conservation that is second to none.

His successor's experience in these fields is indeed limited, and it is with a humble spirit that he approaches the problems that are sure to confront him. His dependence on the trained and experienced men and women of the Survey will be great. These men and women, it is trusted, will accord him the patience and consideration due to one as yet unfamiliar with many details of the work.

The Chief of the Survey can not expect to render a satisfactory accounting of his stewardship to the Secretary of Agriculture unless he with certainty senses that he has behind him the moral backing of his organization. He would entirely fail if he did not have the wholehearted cooperation of all of those with whom he is to work. Therefore, as I enter on this new undertaking I earnestly bespeak from you such cooperation; I earnestly solicit frankness in the dealings that we may have between us; and I ask that you do not fail to aid me by contributing constructive suggestions having to do with the work of the Survey. As time goes on I hope to have the pleasure of meeting all the members of the Survey in their respective territories and of learning at first hand of the work they are doing.

I join with the other members of the Survey in expressing satisfaction over the fact that Doctor Nelson will continue with the Bureau and the sincere hope that the coming years, through which he will prosecute his work in biological research, may be very happy and profitable ones.

Paul G. Redington
Chief of Bureau.

GENERAL NOTES

Mr. Redington, associate chief of the Bureau since February 16, took up his duties as Chief on the morning of May 9. At that time the entire force of the Washington offices assembled for brief ceremonies in honoring Doctor Nelson, who is remaining as senior biologist, and in welcoming Mr. Redington as leader. In turning over his post to his successor, Doctor Nelson expressed his appreciation to the staff for its continued good-will and cooperation in furthering the work of wild-life administration. He also spoke of the growth of the Bureau in the past few years, both in personnel and usefulness to the country, and credited this to a large degree to the faithful services of his staff. Mr. Redington, in response, expressed the desire that the Biological Survey continue to increase its service to biologists, wild-life conservationists, and sportsmen in operating along scientific and economic lines. Mr. Henderson then spoke in complimentary terms of his close association of more than ten years with Doctor Nelson, and of his acquaintance with Mr. Redington for even a longer period, during a part of which time they were both members of the Forest Service in the Western States, and then, on behalf of the members of the Bureau, presented Doctor Nelson with a gold watch, supplementing his own remarks by reading a short and informal presentation address prepared by Vernon Bailey, who was unable to be present. Both Mr. Redington and Dr. Nelson were recipients of baskets of roses and other cut flowers, presented by members of the Survey.

Doctor Nelson reached his 72d birthday on May 8 and was the oldest Bureau chief in the Department. He has been connected with the Biological Survey since 1890, when he was one of the field naturalists of the Death Valley Expedition, and held various positions in the Bureau until 1916, when he was made its chief. In relinquishing this position, at his own request, he will be relieved of administrative duties so that he can continue purely scientific work and assemble for publication the data he has accumulated over his long period of productive activity.

Mr. Redington and Mr. Sheldon visited duck-breeding grounds at Wilmington, Del., on May 24 to observe the duck-propagation work that is being done there by local sportsmen.

Mr. Henderson, accompanied by Mr. Goldman, on May 13 visited the Jones ranch near Middleboro, Mass., and noted the condition of the elk that were shipped there more than a year ago from the National Bison Range, Mont. On his return trip to Washington he called on officials of the State Department of Conservation and of the Massachusetts Fish and Game Commission at Boston to obtain information regarding the abundance of woodcock in New England and the Maritime Provinces, and conferred with bird-banding cooperators in the region.

As chairman of the Department of Agriculture War Memorial Committee, Mr. Henderson, on May 16, with other members of the committee and members of the Commission of Fine Arts, visited in New York City the studio of John Flanagan, sculptor, who has nearly completed the working model of the memorial. This is to consist of a marble bas-relief about 14 feet high and 7 feet wide at the base, within a sculptured ornamental arch supported by representations of a soldier and sailor in the position of present arms. The names of the 67 department employees who lost their lives in the World War will be inscribed on

the memorial. Mr. Henderson reported favorably on the appearance of the model, and states that in the judgment of the committee, the final memorial, in marble, should be an exceptional work of great artistic merit.

Graves of the following six World-War veterans who were at one time connected with the Biological Survey and who are buried in Arlington National Cemetery were decorated on Memorial Day by representatives of the Bureau. Capt. William Frederick Bancroft, died February 4, 1927, with the Biological Survey 14 years; Douglas Clifford Mabbott, killed in action at Bois de Montague, September 15, 1918, with Biological Survey 3 years; Carl Olin Miner, died October 28, 1918, with Biological Survey 4 years; Donald Harley Stevenson, died February 20, 1926, with Biological Survey 10 years; Maj. Iyman Casey Ward, killed in action November 9, 1918, with Biological Survey 6 years; Lieut. Theodore Ward, died October, 1923, with Biological Survey 3 years.

At the annual election of officers of the Biological Society of Washington on May 7, E. A. Goldman was elected president to succeed Dr. H. C. Oberholser, and Dr. H. H. T. Jackson and F. C. Lincoln were re-elected vice-president and treasurer, respectively.

The Zoological Hospital and Research Institute, of the Zoological Society of San Diego, Calif., has generously tendered the use of the equipment and facilities of its new laboratory to the Biological Survey for scientists and field workers of the Bureau. The institute offers exceptional opportunities for research, with an adjacent zoo containing 1,500 birds and other animals, including representatives of most of the larger species of North America. The new laboratory was designed particularly to further the study of animal diseases. The invitation has been communicated to western field offices that would be in position to make use of the equipment thus made available for their use.

Recent visitors from foreign countries at various offices of the Bureau have included Dr. Seinosuke Uchida, ornithologist of the Ministry of Agriculture of Japan; Dr. S. Oda, of the Imperial University, at Keijo, Korea; and Carl Zeuner, of the German Furriers Association, of Braunschweig, Germany.

The following publications of the Bureau were issued in May:

- "Text of Federal Laws and Regulations Relating to Game and Birds," Service and Regulatory Announcement--B. S. 66. Received May 4.
- "Laws and Regulations Relating to Game, Land Fur-bearing Animals, and Birds in Alaska," Alaska Game Commission Circular No. 3. Revised and reissued May 10.
- "American Moles as Agricultural Pests and as Fur Producers," Farmers' Bulletin 1247, by Theo. H. Scheffer. Revised edition, received May 27.

Manuscripts for outside publication have been submitted as follows:

- Bailey, Vernon. "Review of E. R. Warren's 'The Beaver'."
- Gabrielson, Ira N. "Rodents in Relation to Grain Crops," "Rodents in Relation to Bulb Growing," "Rodents in Relation to the Livestock Industry," "Rodents in Relation to Timber," "Rodents in Relation to Alfalfa and Clover Growing," "Rodents in Relation to Fruit Crops," and "Status of Lily Growing in Oregon."

- Preble, Edward A. "September in Nature" and "Mammal Society Meets."
Scheffer, Theo. H. "Precarious Status of the Seal and Sea-lion on Our Northwest Coast."
Sheldon, H. P. "Gunning for Rail on the Patuxent Marshes", "Small-bore Shotguns", and "Selecting an Up-to-date Twenty Bore."
Stephl, O. E. "Effect of Rodent Poisons on Game Birds."
Taylor, Walter P. "The Emergence of the Biology of Forest and Range."

BIOLOGICAL INVESTIGATIONS

Since the recent investigation of the condition of the deer on the Kaibab National Forest, conducted by the Biological Survey in cooperation with the Forest Service, the problem has been vitally affected by a decision rendered (May 16) by three Federal judges at a conference at Los Angeles, Calif., upholding the government of the United States in its right to take any necessary steps in protecting government property on the Kaibab against depredations of deer herds, regardless of the game laws of the State of Arizona. The decision came as a climax to a three-year controversy between Forest Service officials and the State of Arizona. The original plan of the Forest Service was to allow under permit hunting of the deer out of season in order to limit the number to the forage available and to check the damage of the increasing herds to forest growth. The proposed Federal regulations conflicted with the restrictions under the Arizona game laws, and accordingly the State contended that they could not be effective. The present decision affirms the right of the Federal government to protect all growth on its lands by any method within its discretion. This, however, does not include the licensing of hunters to transport deer killed on the Kaibab to places outside in violation of the State game laws.

Dr. Walter P. Taylor continued work during April on the reports on the birds of Washington and the relations of the porcupine to the forest. On April 12 and 13 he attended the meeting of the southwestern division of the American Association for the Advancement of Science, at Santa Fe, N. Mex., and gave addresses on "The Food of the Porcupine in Northern Arizona," "The Biological Side of the Business of Forest and Forage Production," and "Some Present Trends in Biology." In the two latter papers he stressed the fundamental relationship of all the fauna and flora of a region and the need for taking into account, in the consideration of any economic problem, the entire biotic community. Other speakers, representing various interests and educational institutions of the Southwest, discussed the present and future of the Southwest along related lines.

Vernon Bailey visited a muskrat farm in April in the foot-hills 12 miles north of Hancock, Md. Here, in a series of artificial ditches supplied with water from a spring, the owner had liberated 15 pairs of muskrats in 1926. Apparently, owing to crowded quarters and insufficient food, the colony has had little increase. More food will be planted and the experiment will be studied at intervals. Mr. Bailey is at present on an extended field trip into Michigan, Wisconsin, and Minnesota, where he is engaged in studying the habits of beavers and assisting the State conservation officials in capturing them alive where they are doing damage and transporting them to other localities where their presence will not be detrimental.

Geo. G. Cantwell, field assistant, aided by Paul Trapier, was engaged during April and early in May in biological studies in southern Arizona. The first work was done in the region about Yuma, a number of localities within 50 or 75 miles being visited. Thence the State was crossed to Phoenix and Tucson, and the base of the Chiricahuas was worked at several points. Many specimens of great interest have been taken and valuable notes obtained.

Theo. H. Scherffer had a conference on the control of injurious rodents with officials of the Washington State College, at Pullman, on April 1, and in the evening addressed the local Natural History Society. Most of the month was devoted to a study of moles and rodents injurious to agriculture in a broad sense and in particular to bulb production.

Dr. Harry C. Oberholser, on May 10 went to the section between Atlantic City and Tuckerton, on the coast of New Jersey, to make observations on the migration of shorebirds. He reports having arrived there at about the height of the migration, and anticipates making observations of great interest.

A recent survey of specimens in the Biological Survey collection in the United States National Museum shows the total number of birds to be 62,298, as of December 31, 1926. This is an increase of more than 30,000 since 1910, about 10,000 of which have been added since 1920. Mammal specimens in the Survey collection number 129,373, including 751 type specimens. More than 4,100 of these have been added since January, 1922. This total does not include, however, specimens collected outside of North and Middle America, or alcoholic specimens, all of which have been transferred to the National Museum collection proper.

ALASKA

Lawrence J. Palmer, in charge of reindeer-grazing investigations in Alaska, is the author of a mimeographed leaflet entitled "Fires Destructive to Reindeer, Range, Fur, and Game," published recently by the Juneau office of the Forest Service. Fires, it is stated, constitute one of the greatest sources of injury to forage and forest production in Alaska and cause large losses in game and fur animals. The damage to lichen production from fires is particularly serious, as reindeer are dependent upon lichens for much of their food.

A number of substantial fines imposed for violations of the Alaska game law have recently been reported to the Juneau office of the Alaska Game Commission by Wardens Hallson and Dufresne. One alien was fined \$100 on April 12 for killing a moose; another was convicted and fined \$125 and costs for trapping without an alien special license. For possessing three illegally taken marten skins, another violator was fined \$25 and compelled to forfeit the pelts, and a fine of \$25 more was imposed against the same man for buying furs without a fur-dealer license and for possessing unprime fur. The court directed that the 49 mink, 32 lynx, 21 red fox, 5 cross fox, 1 silver fox, 38 muskrat, 13 weasel, and 8 land otter skins (2 of which were unprime) be sent to the U. S. District Court at Fairbanks.

In the 10 months from July 1, 1926, to April 30, 1927, South Dakota State hunters killed 1,135 coyotes and 38 bobcats, 1,151 of which were adult animals and 22 were coyote pups taken during April. The cost to the taxpayers of the State amounted to \$6.14 for each animal of which skin or scalp was saved. In addition to this, 185 unborn coyotes and bobcats were destroyed, 70 coyotes were reported found by stockmen, and 55 coyotes were reported stolen from hunters' lines, making a total of 310 predatory animals over and above those included in computing the above cost. Also 23 wild dogs known to be stock killers were destroyed. The State hunters placed 129,935 poisoned baits during the 10-month period. The above record is of the State hunters only, working under the leadership of Mr. Knowles.

A. E. Oman, leader of rodent control in Kansas, has been making experimental field tests in the use of poisoned seed-corn for the control of moles. Three farmers will plant corn treated with boiled starch-strychnine paste and check up on results in similar tests last year. Tests also will be made to determine if possible whether various dust treatments will result in repelling moles.

An extensive piece of work is being carried on this year in the San Luis Valley under the direction of D. D. Green, junior biologist of the Colorado district for control operations against prairie dogs. On April 1 three crews were started to work, one on the Forest Reserve, another on private lands in Rio Grande County, and a third on private lands in Saguache County. The crew working on Forest Reserve land covered ground in both Mineral and Rio Grande Counties to the extent of 8,200 acres, while the crew on private lands in Rio Grande County treated 13,500 acres. Altogether 7,620 quarts of poison were used. In Saguache County about 4,500 acres were treated with 500 quarts of poison.

Mack Taylor, specialist in rodent control in the Arizona district, has carried out a valuable piece of work near Prescott, where prairie dogs were causing heavy losses to alfalfa growers. The rodents were exterminated from 2,120 acres in this district. One grower, who killed the prairie dogs on 40 acres of alfalfa, expects to have enough more alfalfa to keep 6 additional cows, which he estimates should net him \$576 more a year.

R. L. Petersen, of the Arizona district, started some special work in cooperation with E. E. Horn of the Denver laboratory for the control of porcupines, which have been destroying young pines on the Coconino Forest. At the request of the Forest Service Mr. Horn experimented and perfected a poison for porcupines that gives excellent results. This was placed at 156 dens during April by Mr. Petersen.

FOOD HABITS RESEARCH

Word from Mr. McAtee reports his stopping at Stockholm, Sweden, with a trip to Helsingfors, Finland, planned.

Remington Kellogg during May visited the Museum of Comparative Zoology at Cambridge, Mass., the American Museum of Natural History at New York, and the Philadelphia Academy of Sciences in connection with his research work on amphibians and reptiles.

Miss Phoebe Knappen has been appointed to work on the bibliographic and index files of the division. Miss Knappen is a graduate of George Washington University and at the time of her appointment was doing advanced work in natural science at Cornell University.

FUR RESOURCES

Mr. Ashbrook visited the Experimental Fur Farm at Saratoga Springs, N. Y., during the first week in May. Dr. Karl B. Hanson, who had been in Washington for several days, returned to the farm with him. Thirty-four fox pups were born at the farm and one or two litters were expected in a few days. The pups were not all pure silver foxes, but the result of various cross-breeds between pure standard silver, Alaska silver, cross, or both Alaska and standard silver foxes. The rabbit population has increased by 30 young, comprising Chinchilla and White Flemish breeds.

Doctor Hanson reports that a trio each of American Blue, American White, and New Zealand Red rabbits, recently purchased for breeding purposes, have arrived at the farm. Also a donation of five French Silver rabbits from W. A. Hannah, of the National Rabbit Federation, has been received.

The Conservation Commission of New York State has donated 1,000 small trees to the Experimental Fur Farm. There were in the lot 400 3-year-old Norway spruces, 400 white spruces, and 200 Carolina poplars. These have all been planted and will be used to supply shade for the animals and to serve as a wind-break for the fox ranch.

During the latter part of April, D. Monroe Green, accompanied by Doctor Hanson, visited a number of rabbit farms in Maryland and Pennsylvania. They returned to Washington by way of Baltimore, Md., where they observed the investigational work on rabbit diseases being conducted at Johns Hopkins University. Valuable information concerning coccidiosis and snuffles was obtained, as well as new ideas for the construction of sanitary rabbit hutches.

Mr. Green visited New York City on May 11 and 12 to confer with the general traffic manager of the American Railway Express Company concerning the possibility of reducing the express rate on live rabbits for market purposes. Further study will be given the situation before any definite change in the rate is made.

GAME AND BIRD RESERVATIONS

Mr. Goldman represented the Bureau at the seventh annual meeting of the National Conference on State Parks held May 17 to 20 in the Palisades Interstate Park, New York, and presented a paper on the wild-animal and plant life in State parks. He also visited New York City and Boston, Mass., on business of the Bureau.

An area embracing about 2,350 acres of abandoned rice lands belonging to the United States and abutting on the Savannah River in Jasper County, S.C., near Savannah, Ga., has been set aside as a refuge and breeding ground for native birds, by an Executive order of April 6, 1927. The new reservation has been placed under the administration of the Biological Survey and is to be known as the Savannah River Bird Refuge.

The elk at the Elk Refuge, Wyo., had to be fed this year up to April 27, or two days later than in any previous year. For the first time the feeding has been done from wagons. On April 30, there were still approximately 3,500 elk pasturing on the refuge and adjoining ranches. The rest of the herd had gone on to the foothills and were working their way north along the snow line toward their summer range.

Thirty buffalo calves are reported at the National Bison Range, Mont., two at Wind Cave Game Preserve, S. Dak., and nine at Niobrara Reservation, Nebr.

Eleven buffalo were shipped in April from Wind Cave Game Preserve to a purchaser in Beaver City, Nebr. One was also shipped to the city manager of Atchison, Kans. Much difficulty was experienced in taking the animals to the shipping point, Hot Springs, S. Dak., as a severe storm had made the roads almost impassable.

A. P. Chambers, warden of Wind Cave Game Preserve, reports that grouse have again appeared in Wind Cave National Park, but no quail have been seen since the recent severe storm, when at least two feet of snow fell, some of which remained on the ground till May 9.

Four spikehorn elk were purchased for restocking purposes by the Board of Game Commissioners of Pennsylvania and shipped last month to Dents Run, Pa., from Sullys Hill Game Preserve, N. Dak.

Interesting notes have been sent in by Wesley D. Parker, warden of Sullys Hill Game Preserve, regarding the birds nesting and resting there. Many more geese than last year have been seen flying northward. Flocks of Canada geese and of brant passed over the preserve early in April and in May and a few of the geese stopped for some time on Sweetwater Lake within the preserve. Many flocks of ducks have been seen, while mallards, pintails, a few redheads, and a number of goldeneyes were on Sweetwater Lake. The goldeneyes have commenced to nest in the tree boxes put up for them. A flock of swans and two flocks of pelicans going north have also been observed there. Nineteen wild mallards were banded and turned out on Sweetwater Lake with the tamer mallards. These birds were kept during the winter in the bird house, but most of them will probably fly away in the fall.

Warden Frank H. Rose, of the National Bison Range, Mont., spoke during American Forest Week, April 24 to 30, at various schools in the Flathead region, with night meetings held at St. Ignatius, Ronan, and Lonepine, Mont. The necessity of protecting dead grass of the previous year to build up soil, conserve moisture, and provide nesting areas for the birds was emphasized. On May 3, Mr.

Rose spoke to the Kiwanis Club at Polson, Mont., on wild life and the conservation of forage. He visited Nine Pipe Bird Refuge, Mont., with the secretary of the Montana Game and Fish Commission, on April 18, when he states there were probably 5,000 ducks there, including American mergansers, mallards, baldpates, pintails, redheads, goldeneyes, green-winged teal, buffleheads, spoonbills, lesser scaups, canvasbacks, and others. Coots also were abundant. Killdeer were the only shorebirds seen. Horned and pied-billed grebes, two species of gulls, and four avocets were also observed. A bald eagle was soaring over the refuge, but, though frightening the birds, made no attempt to capture them.

Latest reports from Warden L. L. Bryan, of Big Lake Bird Reservation, Ark., within the flooded district of the Mississippi stated that the warden's cabin within the refuge was still standing, and, though they were still having a great deal of rain, the water level was falling slowly.

Five persons plead guilty to shooting ducks on Big Lake Bird Reservation, Ark., in court at Jonesboro, Ark., on May 2, and were fined \$20 each.

Harold P. Bennett, warden of the Tampa Bay Group of Bird Refuges, Fla., reported recently that he had seen a number of small egrets feeding along the city waterfront close to the ball park at St. Petersburg, Fla. Laughing gulls were also feeding in the same area.

Warden George M. Benson, of Lake Malheur Bird Reservation, Oreg., reports that water is slowly spreading over the dry lake bed, one area of which has been dry for three or four years. Ducks, coots, and shorebirds are plentiful. The first young Canada geese of the season were observed on April 24. Swans had gone and few snow geese remained on the refuge late in April.

There has been a large flight of ducks but not many geese or other birds this spring at Belle Fourche Bird Reservation, S. Dak., according to warden George M. Wilson.

Warden W. R. Jones, of North Platte Bird Reservation, Nebr., reports that geese have left the refuge, but that some ducks and a few large gulls are still seen there.

Rudolph Dieffenbach, land valuation engineer, and Capt. Stanley B. Hall, attorney, both of the Winona(Minn.) Office, were in Washington during the month on matters pertaining to the purchase of lands for the Upper Mississippi River Wild Life and Fish Refuge, and other business.

John L. Lundberg and Harley C. Lawrence have been appointed reservation rangers and U. S. deputy game wardens at the Upper Mississippi River Wild Life and Fish Refuge.

IMPORTATIONS

The season for the importation of quail from Mexico closed on April 30, and the total number of birds brought in at the three ports of Brownsville, Laredo, and Eagle Pass, Tex., aggregated 85,141, most of which were shipped to Oklahoma, Alabama, Georgia, Kentucky, Illinois, Texas, South Carolina, Pennsyl-

vania, Missouri, Maryland, and Kansas. This was the largest number of Mexican quail ever imported into the United States in one season and more than double the number brought in last year.

Among the birds for which importation permits were issued during the month were ten chukar partridges from Germany.

Miss Mary Ella McLellan, of the California Academy of Sciences, was appointed an inspector of foreign birds and mammals at the port of San Francisco effective May 1. Miss McLellan has the distinction of being the second woman to hold this position.

MIGRATORY-BIRD TREATY AND LACEY ACTS

A 26-foot light draft runabout motor boat is being built for the Bureau at Eastport, Md., for use in the enforcement of the migratory-bird treaty act and regulations. It will be equipped with a 100-horsepower motor with a view to making 20 miles or more an hour. W. F. Dillon and a naval architect of the U. S. Coast Guard are making inspections and supervising the construction.

Warden K. F. Roehen underwent an operation on April 28 at Peoria, Ill., for a recurrence of trouble resulting from the auto accident in which he was injured about a year ago. The latest report from him states that he is recovering satisfactorily.

Wardens J. E. Perry, of Memphis, Tenn., and George M. Riddick, of Little Rock, Ark., are doing everything possible in their respective districts to assist in the work of relieving the flood sufferers along the Mississippi River. Warden Riddick was marooned at headquarters for several days. Warden Perry reports that on April 24 he made a trip by automobile to country points 31 miles north of Memphis in the hills and along the edges of flood waters where wild game of all descriptions had been run out by the flood. He states that the only migratory birds seen were a few grebes and American coots, but that he saw any number of wild turkeys and six wild deer. The people seemed interested, as a rule, in protecting the game and had warned others to keep their dogs tied up.

In a report of May 23, Mr. Perry states that the great loss among mammals in the delta districts was due to the lack of high ground over great areas on which the animals could take refuge. Deer, in most cases, as well as bears, swam the river to higher ground. Squirrels remained in the trees and lived on buds and foliage. Migratory and upland birds, he believes, did not suffer much loss, except for a few stragglers, but bitterns, herons, and similar other waterfowl and their nests and young were swept away. Many wild turkeys were killed for food. Quail suffered great losses in the lowlands, and Mr. Perry states that he saw many coveys on floating logs and driftwood.

Warden P. S. Farnham reports that while on a patrol trip near Campville, N. Y., on April 8 he saw a swan feeding in a pond with black ducks and bluebills. This, he says, is the first swan he has ever seen in that locality.

Warden J. A. Holmes states that on April 4 he saw thousands of snow geese feeding in the wheatfields near Hildreth, Nebr.

The following items of interest have been reported to the Bureau by Warden O. D. Steele, of Council Bluffs, Iowa:

On March 26 and 27 he saw geese flying by on their northward migration for hours at a time, generally in the morning and late afternoon. Flocks of 50 to 150 were so close that they were continually intermingling, the greater part of the flight lasting about a week. At one time he estimated the number of geese within view as 2,800, which was but a fraction of the number he saw within the next hour.

On April 17, Mr. Steele found that great blue herons had returned to the nesting grounds in the Missouri River bottoms known as the "Great Blue Heron Rookery," which these birds deserted for the most part 20 or more years ago, although in 1923 a few returned there to nest and a few were seen in 1924, but none since until this year. The nests are confined to three trees, one having 6 nests, one 7 nests, and one 22 nests. All three trees are within 50 yards of one another.

This is the third year that Warden Steele has noticed a late flight of blue-winged teal arrive in his section from about April 20 to 25. These birds are very tame and appear larger than the early teal, all of which left at least two weeks before the later flight arrived. The late teal go to the swamps and river sloughs, mate after arrival, and remain and nest where conditions permit.

An offender charged with hunting wild ducks after sunset was arraigned in Federal court for the eastern district of North Carolina on April 20. A plea of guilty was entered and a jury trial demanded. Forceful arguments made by the attorneys for the defense and prosecution resulted in a verdict of guilty, but sentence has been postponed until the October term of court, when the cases against several co-defendants are expected to be presented.

Cases Terminated -- Reports Received During April

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Creech*, Ferrier*	1	Missouri	Attempting to kill a loon	\$10
Barmeier, Ferrier*	1	"	Shooting at a loon	\$25
Birsch, Creighton*	2	Virginia	Exceeding bag limit on sora	\$15 each
Birsch, Mercer**, Curling**	1	"	Killing a wood duck	\$10
Hoffman, Brown*	3	Alabama	Killing ducks from a motor boat	\$25 each
Linebaugh	1	Tennessee	Hunting ducks from a motor boat	\$25
Perry	1	Mississippi	Possessing ducks in close season	\$10
Ransom, Fenstermaker*	1	Washington	Killing ducks after sunset	\$25
Riddick	1	Arkansas	Killing a swan	\$10
Smith	2	Maine	Possessing eider ducks	\$25 each
Walz*	1	Arkansas	Killing a heron	\$10
"	1	"	Hunting coots from a motor boat	\$10

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Ferrier*	1	Missouri	Selling ducks
Barmeier, Mrovka*	3	"	Hunting ducks in close season
Blackwell*	2	Illinois	Selling ducks
"	3	Tennessee	Selling ducks
Bloxsom, Collins**	1	Maryland	Killing a duck from a motor boat
Britton	1	New Mexico	Hunting geese with an 8-gauge gun
Charlton	1	Ohio	Possessing a loon
"	1	Ohio	Killing a heron
Charlton, Hinton*	1	"	Possessing a heron
Charlton, Holcomb*	1	"	Possessing insectivorous and nongame birds
Clarkson, Stephens**	1	Texas	Killing 14 terns
Harris*	1	Arkansas	Selling a goose
Linebaugh	1	Tennessee	Killing a wood duck
"	3	"	Hunting ducks from a motor boat
Ransom, Fenstermaker*	1	Washington	Killing ducks after sunset
Riddick	6	Arkansas	Killing ducks in close season
Riddick, Chappell**	1	"	Possessing a wood duck
Riddick, Thomason*	6	"	Hunting ducks before $\frac{1}{2}$ hour of sunrise
"	1	"	Killing doves in close season
Roahen	1	Illinois	Killing a coot in close season
"	6	"	Hunting ducks in close season
"	2	"	Possessing geese in cold storage in close season
"	1	"	Possessing ducks and coots in close season

Cases Reported for Prosecution cont'd

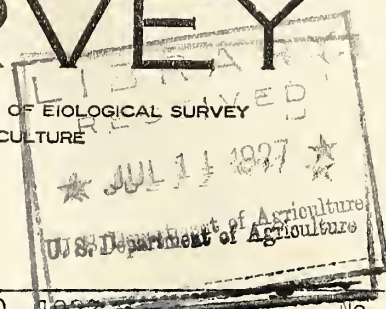
<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Scholler*	2	Illinois	Possessing migratory waterfowl in close season
Shaver, Watters**	2	Minnesota	Hunting ducks after sunset
Steele	1	Oregon	Possessing ducks in storage in close season
"	1	Washington	Possessing ducks in storage in close season
"	3	"	Possessing sandpipers
"	1	"	Possessing loons
"	1	"	Possessing ducks in close season
Tonkin	2	California	Killing ducks after sunset
Tonkin, Hobson**, Hobson**	5	"	Hunting ducks after sunset
Walz*	1	Arkansas	Killing a heron

* U. S. Deputy Game Warden

** Deputy State Game Warden

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



Vol. 8

Washington, D. C., June 30, 1927

No. 6

GENERAL NOTES

Mr. Redington, accompanied by the Chief United States Game Warden, Mr. Sheldon, spent from June 9 to 21 in the New England States meeting the heads of the fish and game departments in Vermont and New Hampshire. At Hanover, N. H., Mr. Redington had several conferences with S. Prentiss Baldwin, one of the active cooperators of the Bureau in bird-banding work, and near Keene, N. H., he also conferred with Wakefield Dort, well-known sports writer and secretary of the National Game Conference.

At its recent meeting in New York City, the Boone and Crockett Club elected Mr. Redington an associate member of that organization.

The Biological Survey contributed to the program of the National Farm Boys' and Girls' 4-H Club Camp, in session in Washington June 16 to 23, by furnishing leaders for three early morning bird tours. A total of 180 registered for these field trips on the first day despite the starting hour, 5:30 a. m. As a maximum limit of 120 had been set by the Office of Cooperative Extension Work, under whose auspices the camp was held, many could not be admitted to the first trip. Dr. W. B. Bell, Dr. H. C. Oberholser, F. C. Lincoln, and E. A. Preble acted as leaders of the squads. The purpose of these field trips was to stimulate the interest of these representative club leaders in birds and to aid them in becoming acquainted with birds and with the best methods of studying and observing them. The advantages of birds and other wild life as features of the programs of boys and girls' clubs were pointed out, as well as their varied importance to agriculture, especially from the economic point of view, and their esthetic value to country life. Mimeographed circulars were furnished outlining the important things to note about birds when on field trips and giving reference to some of the more helpful literature for use in studying birds. Through the courtesy of the American Nature Association, copies of a recent pamphlet entitled, "A Plea for Our Hawks," by E. A. Preble, were supplied. A further part on the program was taken by E. R. Kalmbach who demonstrated to interested groups the laboratory methods employed in studying the food habits of birds in relation to agriculture, horticulture, and forestry.

Dr. T. S. Palmer on May 26 visited New York City to attend the unveiling of a memorial, in the form of a bronze fountain, to the late Theodore Roosevelt as a lover of birds. The ceremony took place at Oyster Bay, N. Y., on the bird sanctuary maintained by the National Association of Audubon Societies, under whose auspices the memorial was erected, and adjoining the cemetery where Roosevelt is buried. Addresses were made by Dr. T. Gilbert Pearson, president of the National Association, Dr. Eugene Swope, in charge of the bird sanctuary at Oyster Bay, and Dr. Frank M. Chapman and George K. Cherrie, well-known ornithologists.

Dr. Charles H. Townsend, director of the New York Aquarium, visited offices of the Bureau on June 2.

Manuscripts for outside publication have been submitted as follows:

Couch, Leo K. "Relationship of Predatory Animals and Birds of Prey to Rodent Life."

Goldman, E. A. "A New Kangaroo Mouse from California."

Jackson, Hartley H. T. "Review of Burrell's 'The Platypus'."

Kalmbach, E. R. "Economic Ornithology in Recent Entomological Publications."

Nelson, E. W. "Drainage and Migratory Game-Bird Reservations."

Oberholser, Harry C. "The Migration of North American Birds: Woodpeckers" and "April and May Birds About Washington, D. C."

Poole, C. G. "The Leather Collar, A Story of a Coyote."

Preble, Edward A. "October in Nature."

Redington, Paul G. "Bureau of Biological Survey."

Taylor, Walter P. "The Four Thousand Dollar Dog."

The following publications of the Bureau have been received; 23:

"Guide for Taking Censuses of Waterfowl," Bi-917, 2 pp.

"Some Suggestions for Bird Field Trips," Bi-922, 1 p.

The 1926 Yearbook of the Department of Agriculture, advance copies of which were received on June 20, contains a great number of short articles on the lines on which the various branches of the Department operate, arranged alphabetically in the order of the chief subject-word of the title of the articles. Contributions of the Biological Survey were seven in number—six of the articles, and a list of Federal bird refuges and game preserves:

Blackbird Control in Grain Areas, by E. R. Kalmbach; pp. 169-171, figs. 20-21.
Draining Marshlands Unwisely, by Talbott Denmead; pp. 312-314, figs. 74-75.

(these figures were transposed in printing).

Fur Farming a Growing Industry, by Frank G. Ashbrook; pp. 394-395, figs. 102-104.

Game Surpluses Perplex Wild-life Guardians, by Edward A. Goldman; pp. 397-399, figs. 105-106.

Reindeer in Alaska Thrive and Multiply, by Edward W. Nelson; pp. 631-633, figs. 193-194.

Wolves, Coyotes Take Big Toll from Stockmen, by W. B. Bell; pp. 774-776, figs. 262-264.

Federal Bird Refuges and Game Preserves; pp. 795-799, fig. 271, p. 800. The omission of the figure, a map referred to in a separate column for each of the reservations in continental United States, was detected in time to be corrected in the last fourth of the edition.

BIOLOGICAL INVESTIGATIONS

Vernon Bailey spent the latter half of May and the early part of June investigating the distribution, abundance, and habits of beavers, mainly in the Upper Peninsula of Michigan. Several complaints of injury to property by the animals were investigated, and in most cases the damage was found to be slight. Much interest in the propagation of the beaver was manifested, and Mr. Bailey was able to demonstrate, by means of freshly captured animals, that the beaver will readily lend itself to the conditions of semi-domestication, since animals only a few hours out of the trap allowed themselves to be handled and readily took food from his hands. He spoke before the Upper Peninsula Development Bureau at Iron Mountain, Mich., illustrating his talk with a live beaver. After further work on the same kind in Wisconsin, he plans a short visit to his old home at Elk River, Minn., before taking up biological studies in Oregon in completion of his survey of that State.

Theo. H. Scheffer early in May completed a survey of the conditions attending the growing of bulbs in the northwestern part of Washington State from Sumas south to the Mount Vernon region. He found moles somewhat injurious to the plantings of tulips, but doing little damage to iris. Meadow mice were also destructive in some cases. Efforts to develop a method of destroying moles by exploding charges of carbon disulphide in their burrows were not successful.

During the latter part of May Mr. Scheffer made a survey of the ground-squirrel situation in the central and eastern parts of the State. He found the Columbian ground squirrel still a serious pest in certain sections, the Townsend ground squirrel especially abundant in the southern parts of its range, and the Yakima species in about its usual abundance. In company with representatives of the State College, he assisted in a general biological reconnaissance in the Snake River Canyon for a distance of about 100 miles.

George G. Cantwell and Paul Trapier have continued their zoological work in Arizona. By using an automobile they have been able to collect at a number of localities scattered over the southern part of the State, and have been successful in filling many gaps in the knowledge of the distribution of important species of the animal life of this section.

Among prominent zoologists who have recently visited the Museum office of the division are Dr. Marcus Ward Lyon, jr., of South Bend, Ind., on May 18; Dr. Chas. C. Adams, director of the New York State Museum, Albany, N. Y., on May 23 and 24; Dr. L. Alfred Mannhardt, head professor of zoology, New York University, New York City; H. L. Ward, director, Kent Scientific Museum, Grand Rapids, Mich., and Prof. Paul M. Rea, director, Cleveland Museum of Natural History, on May 26; and Dr. Leont J. Cole, professor of genetics, University of Wisconsin, Madison, Wis.; Dr. Adolph H. Schultz, professor of physical anthropology, Johns Hopkins University, Baltimore, Md.; Dr. Geo B. Wislocki, associate professor of anatomy, Johns Hopkins

Medical College, Baltimore, Md.; and Dr. Carl G. Hartman, Department of Embryology, Carnegie Institution of Washington, Baltimore, Md., on June 3. Also C. E. Sykes, of Ardmore, Okla., a sportsman who has been active in collecting groups for the Oklahoma University Museum and has presented specimens to the Biological Survey collection, called on June 8.

Dr. H. C. Oberholser spent from May 9 to June 4 studying the migration and abundance of shorebirds along the coast of New Jersey and Long Island. In New Jersey he was accompanied by U. S. Game Warden P. L. Hilliard on the Biological Survey boat Brant. He reports an interesting and successful trip in every way, migration at that time being at its height. Several species of shorebirds, particularly the black-bellied plover, semipalmated plover, ruddy turnstone, least and semipalmated sandpipers, and the dowitcher were found abundant and a number of other species in smaller numbers. The trip to Long Island was made in company with U. S. Game Warden P. S. Farnham, partly by boat and partly by automobile. The resorts for shorebirds and wild fowl were investigated along the entire length of the island. At the time of the Long Island observations, however, the principal migration of shorebirds had passed.

Dr. W. P. Taylor during May was engaged largely on routine matters, including the revision of his manuscript report on the birds of Washington. For about ten days in the middle of the month he worked on the fencing and other details incident to the establishment of the experimental plots where the relation of rodents to forage production will be studied. These plots, situated in the Tonto Basin near the Roosevelt Dam, are being established in cooperation with the Forest Service.

O. J. Murie, associate biologist, who has been on furlough since last November pursuing graduate work in zoology at the University of Michigan, from which he has now received the degree of Master of Science, returned to Washington on June 6.

"Mammals and Birds of Mount Rainier National Park," a 249-page bulletin by Dr. Walter P. Taylor, biologist of this Bureau, and Dr. William T. Shaw, formerly professor of zoology in the State College of Washington, was published early in June by the National Park Service, U. S. Department of the Interior. This book, in three sections, treats the transcontinental life zones, four in number, represented on the slopes of Mount Rainier, with their communities of mammals, birds, and plants; the 56 forms of mammals; and the 102 species of birds. For the information of the many visitors to the park interested in the wealth of the animal life to be studied there, a section is included on methods of becoming acquainted with the mammals and birds of the region. The publication is illustrated with 109 text figures and a folded colored map of the life zones. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.; price, 85 cents.

Through the cooperation of officials of Saguache County and the warden of the Colorado State Reformatory at Buena Vista, ranchers in the vicinity of Villa Grove, Colo., have obtained the services of 16 boys from this institution to help them cover the territory on prairie-dog eradication between Poncha Pass and Mineral Hot Springs. Leo L. Laythe, leader of the Colorado district, reports that these boys are doing a piece of work that otherwise could not have been undertaken because of lack of funds.

Roy Fugate, junior biologist in the Oregon district, investigated reports of the Forest Service that field mice were damaging the range in the vicinity of Immaha River. It was found that about 200,000 acres were infested and that fully 50 per cent of the grass had been destroyed. This is the first instance in Oregon of serious damage to range grasses by field mice.

Ira N. Gabrielson, leader of rodent control in Oregon, reports that considerable damage is being caused to tulips, lilies, and narcissi by moles and mice. The bulb industry in western Oregon is becoming an important one, and much of the real damage to bulbs from moles and mice occurs in winter between the time they are planted and when they start to grow in spring. Mr. Gabrielson is aiding the growers by instructing them in rodent-control measures and is planning to expand the work to cover fall and early winter operations.

F. E. Garlough, of the eradication methods laboratory, accompanied by a member of the city staff of Portland, Oreg., carried on some experimental work in and near that city on the use of carbon disulphide in the eradication of moles and pocket gophers. The three weeks experiment with this chemical showed remarkable results in comparison with any other material yet used, but further experiments are necessary before any definite statements regarding its efficacy can be made. The results thus far obtained, however, indicate that it will be possible to work out some method of controlling moles and pocket gophers with carbon disulphide.

Stanley G. Jewett, leader of predatory-animal control in Oregon, reports making a careful check of the territory between the Deschutes River and the Blue Mountains, where he had active operations under way with both traps and poisons during the past winter. A special effort made to locate dens and get adult animals during April and May resulted in 367 coyote pups, 105 adult coyotes, and 10 bobcats being accounted for by skins or scalps. It is felt as a result that the numbers of predatory animals have been reduced over this range in a more thorough manner than ever before. Mr. Jewett reports having made a personal inspection of a section of Grant County where a rabid coyote had been on a rampage. The coyote on May 26 had attacked a ranch employee who stated that the animal was very active and that it was driven away only after considerable effort. On account of the heavy clothing that the man wore the coyote's teeth did not penetrate the flesh.

In the South Dakota district, Hunter Ray Huntley reports finding grouse feathers at two coyote dens and the remains of an antelope at another, in a locality in which the South Dakota Division of Game and Fish had recently planted these birds. Likewise Hunter W. B. Elley reports finding grouse feathers at one den and pheasant feathers at another. The stomach of the coyote killed at this latter den was full of pheasant meat.

In rodent-control operations during May in the South Dakota district, prairie-dog bait was supplied the Pine Ridge Indian Agency and small quantities of pocket-gopher bait were distributed in Faulk County for demonstrational purposes. Several county agents have taken up organized rodent-control work in the State, particularly for the destruction of the flicker-tail ground squirrel. The county agent of Brown County is working for organized rodent control, as this is one of the largest small-grain producing counties in South Dakota and flickertail infestation is heavy.

A large fur company of Denver, Colo., has advised the South Dakota office that it would carry on a more active campaign for buying jack-rabbit skins in the State during the coming winter. This should result in quite a reduction in the jack-rabbit population in South Dakota, because it is planned to establish local buying stations over the western half of the State as well as to have agreements with produce companies in the eastern part. The value of the jack rabbits purchased in South Dakota last winter by this company was \$80,000.

In the Washington district, Dr. Glen R. Bach, leader of predatory-animal control, reports that Hunters Charles Stoner, Ed Johnson, and Harold Hall accounted for 2 cougars on the White River, one of which was roped alive and at present is being held at Priest Point Park in Olympia. It is planned to turn it over to the Washington State College of Agriculture at Pullman to be kept on the campus as a mascot.

Charles J. Bayer, leader of predatory-animal control in the Wyoming district, states that bounty hunters were active during May, following the recent action of the legislature in appropriating a small sum of money for the payment of bounties. Mr. Bayer reports that in some instances the Federal and State hunters killed some of the adult coyotes after the bounty hunters had taken the pups, and with so many bounty hunters active the government hunters were forced to reverse their regular practice and take the young coyotes from the dens immediately after they were located, instead of spending time to trap or shoot the adults before taking the young.

In the Texas District, C. R. Landon reports that Hunter Joe Baker and his son have had excellent results in trapping operations in Parker County during the past season. Hunter Baker commenced his work in Parker County in November. During that month a third of his salary was paid from government funds, while the balance was paid from funds raised by local stockmen. The work was so satisfactory that the chamber of commerce at Weatherford raised sufficient funds to pay half the cost of the work of Hunter Baker and his son during the following months, the other half being defrayed as before by farmers and stockmen in the locality.

George W. Boyd, for the past two years in charge of rodent-control in northern Wyoming, and with the Biological Survey since 1924, resigned effective June 10 to enter county-agent work in Hot Springs County, Wyo.

Under a pleasing photograph of James Silver, reproduced on the first page of "Neighborhood News," the official organ of the Rhode Island Avenue Citizens Association, Washington, D. C., is the following, which will be of interest to his friends in the Bureau: "The energetic chairman of our Committee on Health and Sanitation is a native of Denver, Colorado, and a graduate of the Colorado Agricultural College. He is employed in the Biological Survey, Department of Agriculture, in charge of controlling injurious mammals in the eastern States. Mr. Silver has lived in Woodridge since 1915, residing for the past several years at 3145 24th Street."

FOOD HABITS RESEARCH

Mr. McAtee returned on June 24 from his extended trip in European countries and reports that the information sought on methods in economic ornithology and in propagation of game birds was obtained in good measure. Prior to leaving for this country, he attended the International Congress for the Study and Protection of Birds at Brussels, June 6 to 9, and was the only representative from an English-speaking nation.

F. M. Uhler left Washington on May 28 for Minnesota, where, after a period of leave, he will start the summer's botanical survey work on the Upper Mississippi River wild Life Refuge. He will be assisted by Paul Jaqua, a graduate of the University of Minnesota, and will have the services of a pilot and launch to be used at headquarters. A light canoe with an outboard motor will permit the exploration of shallow water areas.

In a recent work on economic ornithology, "The Practical Value of Birds," by Junius Henderson, professor of natural history and curator of the museum, University of Colorado (Macmillan, 1927), an extensive bibliography of more than 500 titles includes 170 by 31 members or former members of the Biological Survey. Of the 170 titles, 116 are of official contributions by the Biological Survey to the series of publications of the Department of Agriculture.

The problem of duck mortality in our western States is to receive particular attention during the coming season, especially at such points as Tule Lake, Calif., the Government Sump at Klamath Lake, Oreg., and Malheur Lake, Oreg., where alkali poisoning is not known definitely to be the causative agent. C. C. Sperry, of this division, will visit areas where duck sickness appears and make a thorough study of it with a view to determining whether alkali poisoning is the cause. He will establish headquarters as close as possible to principal points of outbreak and study the malady in detail along the lines developed by Dr. Alexander

Wetmore in his initial investigation of the problem at Great Salt Lake in 1914-1916. In the past, valuable aid has been had from pathologist and bacteriologists of the Bureau of Animal Industry and of western States and institutions, and their cooperation again will be sought should evidence be obtained that something other than alkali poisoning is causing the annual mortality among the wild fowl. Evidence of threatened outbreaks of duck disease reported to the Bureau will greatly assist Mr. Sperry in planning his field itinerary to the best advantage. .

FUR RESOURCES

Mr. Ashbrook spent the latter half of June on field trips in interest of the work of the division. On June 22, he addressed the meeting of the Wisconsin fox breeders at Manitowoc, and on June 25, the meeting of the Minnesota Fox Breeders Association at St. Paul. While in St. Paul he conferred with specialists regarding investigations for the control of fox diseases. During the early part of his trip he conferred with officials of the National Association of the Fur Industry, visited the Experimental Fur Farm at Saratoga Springs, N. Y. and inspected a muskrat farm near Cleveland, Ohio.

Monroe Green left Washington early in June for points in California, which is at present the center of the rabbit-raising industry. He will confer with rabbit breeders, individually and through their organizations, in order to gather as much information as possible on methods by which the Department can assist in the development of the industry, and will gather information on difficulties encountered by breeders and methods of overcoming them.

The Fox Breeders Gazette, for May, 1927, contains an article written in popular form on "Tetrachlorethylene -- A New Remedy for Hookworms in Foxes," by Dr. Karl B. Hanson, in charge of the Experimental Fur Farm at Saratoga Springs, N. Y. Being thus made available to breeders seriously interested in their work, it should be very useful in overcoming one of the greatest obstacles they encounter.

During the first week in June, Dr. Hans Nachtsheim, president of the German Federation of Rabbit Breeders, of Berlin, Germany, visited the division. Doctor Nachtsheim was chiefly interested in breeding experiments with fur animals, particularly the rabbit, carried on by this Bureau. He is conducting experiments in Germany with the Castorex rabbit, a new breed that resembles the beaver.

"Methods d'Elevage des Animaux a Fourrure" (Methods of Raising Fur Animals) is the title of a 165-page book just received from the author, G. P. d'Aigneaux, vice-president of the French Association of Raisers of Fur Animals. The volume is dedicated in part to the Biological Survey, and many of the illustrations are credited to the Bureau.

GAME AND BIRD RESERVATIONS

An interesting account of the band of antelope at Grand Canyon National Park, Ariz., appears in the "Nature Notes of Grand Canyon," issued by the National Park Service for May, 1927. The fawns establishing this band were shipped from Reno, Nev., in September, 1924, through the cooperation of the Biological Survey, by E. R. Sans. Funds for capturing and delivering them were provided by private individuals interested in game conservation. The following is quoted from the account mentioned:

"The past month has witnessed some interesting happenings in the small antelope band within the Grand Canyon National Park. 'Crooked Horn,' as he is known, is the out-standing buck of the band. During the past year he has ruled the other members with an iron hand. Each of the other members would stand aside as he passed in due respect to their recognized leader. 'Crooked Horn' fairly swaggered along the Tonto Plateau apparently aware of his own importance. Perhaps it may have been dissatisfaction with the small world over which he ruled so majestically or again it may have been due to his own egotism. At any rate uneasiness was manifested in 'Crooked Horn' and finally brought to a climax.

"'Shorty' Welch, the trail caretaker, has acted the part of the good shepherd for the small band during the past year. Each evening found the members congregating around his tent for protection, while every morning the band would follow him along on the trail, browsing on the vegetation of the plateau. Welch little suspected any animosity towards him on the part of 'Crooked Horn' and his clan. That he was mistaken in his belief was soon apparent.

"Welch was working on the trail when the thunderbolt, in the form of a powerful charge from 'Crooked Horn' struck him. Welch was taken completely unaware. He picked himself up several feet below the trail in time to meet another charge. The second charge failed to have the same gravitational effect upon Welch that accompanied the former. By some miraculous means he was able to step aside and obtain a good grip on the animal's horns. A struggle ensued between man and animal, with the remaining nine members of the band acting as spectators. At last the violent plunges of the animal ceased and Welch released his grip. A third charge was not forthcoming for 'Crooked Horn' beat a hasty retreat, leaving Welch undisputed victor of the day.

"'Crooked Horn' undoubtedly lost the respect of some of his followers for his poor showing as is evidenced by later developments.

"In order to permit the animals access to a greater browsing area, the gate shutting off passage to the east was removed. This act was the incentive that caused a split in the band. Three of the bucks, accompanied by three does, immediately passed beyond the former barrier and took up their haven at Indian Garden, a distance of 17 miles from their former home. Abundance of forage is present at this place. 'Crooked Horn' and three does remain at Hermit Camp. Here he rules without opposition over his dwindling following, apparently sobered to the realization that man is even greater than himself."

President Coolidge's "summer White House," the Game Lodge of the Custer State Park Game Preserve in the Black Hills of South Dakota, is only a few miles north of Wind Cave National Park Game Preserve, the 4,-000, acre big-game reservation maintained by the Biological Survey. This preserve will be nearly doubled this summer by inclosing 3,000 more acres. Wind Cave, for which both the national park there and the game preserve have been named, is one of the larger of the known caves of the West and, together with the big-game animals in the preserve, attracts increasing thousands of visitors each year.

Cave

The pet antelope, "Lopi" (alias "Billy"), at Wind/Game Preserve, S. Dak., died in May from an unknown cause. Warden Chambers believes, however, that he died as the result of being fed by visitors too much candy and other matter, such as tobacco, which he would also eat. The warden endeavored to prevent such feeding of the animal but was unable at all times to control visitors who persisted in the practice. This animal was shipped by E. R. Sans from Reno, Nev., in the summer of 1924 to Wind Cave Preserve, and had since been a great attraction to visitors. Many of the western papers printed on account of "Lopi's" death.

Associate Forester E. A. Sherman, District Forester A. S. Peck, and Supervisor J. F. Connor, of the Harney National Forest, visited Wind Cave Game Preserve on May 28.

Guy F. Allen, executive assistant to the Director of the Bureau of the Budget, visited the National Bison Range, Mont., on May 26. He demonstrated that he was a good hiker by climbing to the highest point on the range.

Warden Frank H. Rose, of the Bison Range, and U. S. Game Warden Webster Ransom observed and listed 60 different species of birds in the vicinity of the Bison Range and Nine Pipe Bird Reservation on May 28, but failed on that day to see many others known to be common in that area. On May 30, Mr. Rose and Mr. Ransom drove up Moiese Valley to Horte, Kicking Horse Reservoir, and Nine Pipe Bird Reservation and listed 70 species of birds seen.

On May 17, 508 buffalo and 40 buffalo calves were released from the corrals on the National Bison Range, where they had been penned and fed since late in March, and turned back on the open range. They were kept off the range in order to permit the grass to attain sufficient growth before grazing was allowed.

The State Game Association of Montana has appropriated \$100 to patrol Nine Pipe Bird Reservation and to poison the ground squirrels on that area.

Heavy rains caused considerable damage at Niobrara Reservation, Nebr., in May. At headquarters the yards and cellar were flooded and the big-game fence surrounding the north pasture suffered much damage.

Three buffalo calves are reported at Sully Hill Game Preserve, N. Dak. Six young wild geese have been hatched by a domestic hen from eggs that were laid by one of the wild geese at this preserve.

The coldest spring known in many years in that locality has been experienced at the Elk Refuge, Wyo. During May there were only four days of clear weather, with the rest of the month cold and stormy. Small bands of elk stayed on the refuge later this spring than in any previous year. When the irrigation water was turned on to the meadowlands, it was necessary to move the elk that were on the refuge back to the foothills, but several continued to come back to the alfalfa fields. On June 1 there was a small band in the horse pasture. At that time there was still several feet of snow on the mountain roads leading into Jackson Valley.

On May 18, a portion of the dam, which formed as the result of a huge landslide two years ago, on the Gros Ventre River in the locality of the Elk Refuge, gave way, letting a wall of water 20 feet high rush down the river bed and causing more or less havoc all the way from the dam to the Idaho Falls, Idaho. It was reported that the break was about 80 feet high and 800 feet wide. The lake that formed behind the dam was about five miles long and one-half mile wide at the widest place. It was originally about 200 feet deep, but had been lowered 65 feet. Six persons were drowned, and mixed in with the debris were many carcasses of horses and cattle and a few elk.

Early in June, Warden L. L. Bryan, of Big Lake Bird Reservation, Ark., reported that the water there was again rising. He stated that the river at Hornersville, Mo., had risen three feet within four days. Latest reports indicate that, while the water was still two feet deep in the boat shed at the refuge, it was slowly falling.

Ernest P. Walker, with Mrs. Walker, arrived in Washington from Juneau, Alaska, on June 23 to take up his new duties in this division. En route Mr. and Mrs. Walker stopped in Minnesota and North Dakota for a short vacation.

At the end of May receipts covering the first 11 months of the fiscal year from licenses, fines, and forfeitures under the Alaska game law had exceeded \$36,000, and skins, chiefly beaver, valued at more than \$10,000 were being held.

The vessel Beaver, which was transported to Alaska from Seattle, Wash., for patrol work on the Yukon River this summer, was launched May 20 and by the end of the month, under the direction of Warden Frank Dufresne, it had proceeded down the river. The Seal, which has been in Seattle for overhauling, returned to Juneau early in June to begin patrol work in its district, including the Alaska Peninsula, the Aleutian Islands, and South Bering Sea.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Keith McCanse, game and fish commissioner of Missouri, and Frank H. DeCou, chief of wardens of that State, called at the Bureau on June 13. They were on their way to Pennsylvania to study the system of game refuges in that State.

This Division was awarded a silver cup by the Associated Sportsmen's Clubs of California for its exhibit at the Sportsmen's Show held in San Francisco May 14 to 22. The cup was suitably inscribed and is on display in the office of U. S. Game Warden George Tonkin, at Berkeley, Calif. Included in the Division's exhibit was a pen 24 by 12 by 6 feet, in the center of which was a cemented irregular duck pond, and at the back and on one side of the pen green tules were placed. In the duck pen were a whistling swan, a honker goose, a white-fronted goose, a lesser snow goose, a pair of mallards, a pair of black mallards, a pair of sprigs, a pair of gadwalls, a pair of widgeons, a pair of mandarins, a male redhead duck, a male green-winged teal, a male cinnamon teal, and a female wood duck. The mallards began laying at the start, and a nest with half a dozen eggs in it was arranged among the tules where it could be seen from without. Warden Tonkin states that the ducks and geese seemed contented, and practically all of the time some birds could be seen in the water feeding on green stuff, diving for grain, or bathing. The variety of birds probably accounted for the continual activity. The reported attendance at the show was 150,000.

U. S. Game Warden W. H. Ransom reports that the Eighth Annual Sportsmen's and Tourists' Fair held in Spokane, Wash., May 10 to 14 was a success in every way and that approximately 50,000 people attended, a noticeable increase over 1926. A live swan, two greater snow geese, two Canada geese, one white-fronted goose, and one cackling goose were on exhibition at the fair and were the center of attraction for a large crowd at all times surrounding the pond at the fair grounds. Two baldpate ducks and a number of mallards also were included in the live waterfowl exhibit. A painted duck marsh scene was the center exhibit at the rear of the booth. Mr. Ransom states that much interest was manifested in the Bureau's exhibit.

Warden J. E. Perry, of Memphis, Tenn., reports that there will be an abundant crop of doves all over his district this year, judging from the number of pairs he has seen. He says that in any direction along the roads and in fields, especially on the highways and railroads early in the morning and late in the afternoon, hundreds of doves may be seen.

Warden T. T. Bloxson states that while in the vicinity of Wachapreague, Va., about 5 p. m. on May 24 he heard the call of Hudsonian curlew in the air and when he looked up he saw a flock of thousands of these birds flying very high and heading due north.

While patrolling near Brazoria, Tex., on May 29, Warden Frank Clarkson found an ivory-billed woodpecker, which had been killed some time before and was hanging in a small tree. Mr. Clarkson states that this is a rare bird in that section and is the first he ever saw.

Warden Clarkson writes in his report for the period May 29 to 31 that his district has had an extremely dry spring with only local showers since February, and that if this condition continues much longer it will be very injurious to the fresh water lakes in that part of Texas; in fact, all lakes he has visited are far below normal in water supply and the natural duck food has begun to suffer.

The following is quoted from Warden Harry Barmeier's report for the period June 1 to 4 of weather conditions in eastern Missouri:

"The daily rains have continued all through the week--hailstorms that surely damaged many young birds and animals. When they go through automobile tops and cut gashes in the occupants' heads, they surely are killing wild life to some extent. I used to take with a grain of salt the story that hailstones equaled hens' eggs in size; now I am convinced, as the hailstones in this vicinity were much larger than hens' eggs. Newspapers quoted the weight of some hailstones at $1\frac{1}{4}$ pounds."

In Federal court at Sioux City, Iowa, on May 23, eleven persons charged with violating the migratory-bird treaty act by hunting wild ducks after sunset were each fined \$10, together with costs. The costs totaled \$245.80, in each case exceeding the amount of the fine imposed.

Cases Terminated -- Reports Received During May

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Phillips**, Piper**	1	Missouri	Killing snipe in close season	\$25
Barmeier, Piper**, Piper**	1	"	Possessing ducks in close season	\$100
Bloxsom	1	Virginia	Killing ducks from motor boat	\$25
Charlton	1	Ohio	Possessing nongame birds	\$5 and costs of \$5.
Charlton, Hinton**	1	"	Possessing a swan	\$10
" "	1	"	Possessing a blue heron	\$50
Charlton, Niemeyer**	1	"	Killing a swan	\$50 and costs of \$20.50
Linebaugh	1	Tennessee	Possessing a swan	\$25.
Riddick	3	Arkansas	Killing ducks in close season	\$10 each
"	1	"	Selling ducks	\$10
Riddick, Thomason**	1	"	Possessing meadowlarks	\$15
Shaver	1	Missouri	Hunting ducks in close season	\$10
"	1	Minnesota	Possessing ducks in close season	\$27
Steele	7	Iowa	Hunting ducks after sunset and costs	\$10 each
Steele, Holmes	4	"	Hunting ducks after sunset	\$10 each and costs
Tonkin	1	California	Possessing a wood duck	\$5
"	1	"	Possessing avocets	\$5.
Tonkin, Thompson**, Hammack**	1	"	Killing a swan	\$1.

* U.S. Deputy Game Warden

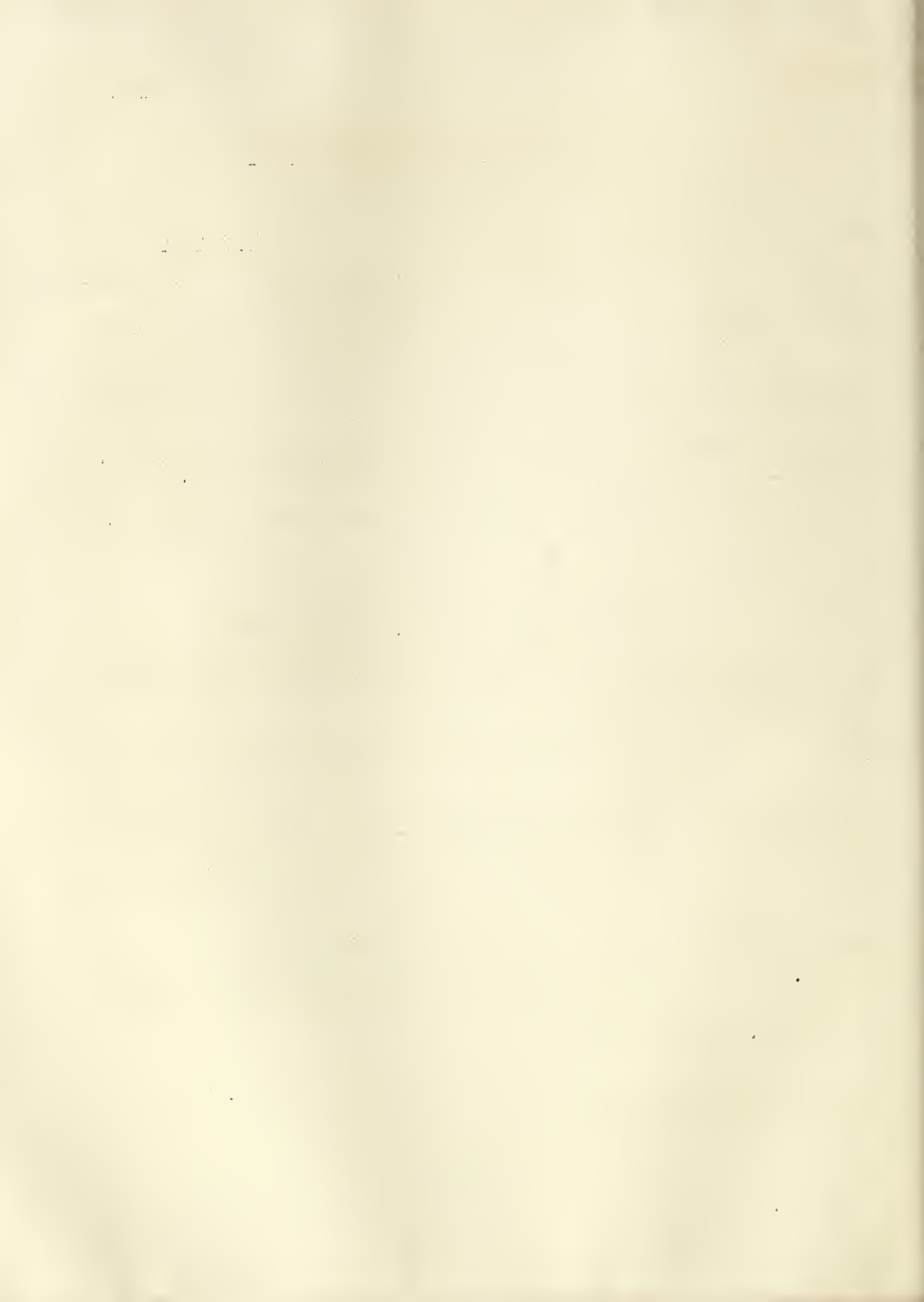
** Deputy State Game Warden

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier	2	Missouri	Killing ducks from a motor boat
Barmeier, Ferrier*	5	"	Hunting ducks in close season
" "	2	"	Killing snipe in close season
Barmeier, Ferrier*, Creech*	3	"	Killing ducks in close season
Barmeier, Phillips**, Piper**	1	"	Killing snipe in close season
Barmeier, Piper**, Piper**	1	"	Killing ducks in close season
Charlton, Niemeyer*	1	Ohio	Killing a swan
Clarkson	1	Texas	Possessing a gull
Ehlers*, Crecelius**, Kain**, Corbin**, Rathfrock**	2	Indiana	Killing ducks in close season
Smith*	1	Wisconsin	Possessing coots in close season; killing a heron
Stadlmeir, Baum**	3	No. Carolina	Hunting ducks from a motor boat
Steele	4	Washington	Possessing sandpipers
Steele*	1	Missouri	Possessing geese in close season
Tonkin, Stanley**	1	California	Selling ducks
Whitehead	2	Florida	Killing doves in close season

* U. S. Deputy Game Warden

** Deputy State Game Warden



THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

Vol. 8

Washington, D. C., July 29, 1927

No. 7

GENERAL NOTES

Mr. Redington is on an extended trip in western States visiting the various field offices, including the big-game and bird reservations and the predatory-animal and rodent control headquarters, and becoming better acquainted with field personnel and operations.

The following publications of the Bureau were issued in July:

- "Rat Control," by James Silver. Farmers' Bulletin No. 1533. Received July 7.
- "Open Seasons for Game, 1927-28," compiled by Frank L. Earnshaw. Poster No. 46 (Bi). Received July 25.
- "Regulations for the Administration of the Upper Mississippi River Wild Life and Fish Refuge." Service and Regulatory Announcement--B. S. 67. Received July 25.

Manuscripts have been received for outside publication as follows:

- Goldman, Edward A. "Wild Animal and Plant Life in State Parks."
- Jackson, Hartley H. T. "Review of Junius Henderson's 'The Practical Value of Birds'."
- McAtee, W. L. "Review of Henderson's 'The Practical Value of Birds'."
- Murie, O. J. "Abnormal Growth of Moose Antlers" and "Weighing Game Animals."
- Oberholser, Harry C. "The Lure of Bird Migration" and "Some Interesting Ducks."
- Preble, Edward A. "Our Woodcock and His Cousins."
- Silver, James. "Pilot Blacksnake Feeding on the Big Brown Bat."
- Young, Stanley P., [and Arthur H. Carhart]. "Renegades of the Range Land."

Guy W. Lane, of the Office of Accounts, spent the latter part of June and the first of July on vacation at his home in Swayzee, Ind. Hyman Liebman, in charge of mails and files, was on vacation during the month at Philadelphia, Atlantic City, and New York.

BIOLOGICAL INVESTIGATIONS

Vernon Bailey reports interesting work in progress in southeastern Oregon. He has sent in specimens collected in this region and states that valuable information has been obtained regarding life zones. He is completing field work required for preparation of a report on a biological survey of that State.

O. J. Murie, who has been engaged in studying big-game and other biological problems in Alaska for the past several years, has been detailed to make an intensive study of the southern elk herd in the vicinity of Jackson, Wyo. This is being undertaken in accordance with recommendations recently made by the Elk Commission and with a resolution passed by the American National Livestock Association at its annual meeting held at Salt Lake City in January, 1927. Cooperation of the Forest Service has been obtained in working out grazing problems, including the kinds of food plants consumed, the effects of overgrazing, relation of movements of elk to available feed, the relation of their feeding habits to grazing of livestock, and other features essential as a basis for the maintenance of adequate feed for the elk and the maximum use of ranges for livestock production. The Bureau of Animal Industry will cooperate in studying the diseases and parasites that affect the health of the elk and the relationships that these may sustain to domestic stock. Dr. Maurice C. Hall, chief of the Zoological Division of that bureau, will visit Mr. Murie early in August to make a preliminary survey of conditions and outline investigations that should be undertaken to safeguard the health of both elk and livestock. The investigation will be conducted in cooperation also with the State Game and Fish Commission, the National Park Service, and other interested organizations.

The waterfowl census, which is being inaugurated by the Biological Survey to obtain specific comprehensive information regarding the numbers, distribution, and movements of ducks, geese, swans, and coots throughout the entire country, including Alaska, Canada, and Mexico, is meeting with a gratifying response from Federal and State officials, sportsmen and conservationists' organizations, and individuals. Organization of this cooperative undertaking is rapidly taking shape ready for the first counts and estimates to be made in August.

Dr. Walter P. Taylor during the month conducted important studies of rodents in relation to grazing and forestry on the Santa Rita Range Reserve Arizona, and in the Tonto Basin. Special attention was devoted to the habits of jack rabbits and cottontails and to damage inflicted by them, and information was obtained and specimens collected of many other species that occur in the vicinity of the experimental plots.

By Executive order, about one section of land was recently transferred to the Biological Survey for use in the Alaska reindeer investigations. This land is located conveniently to the Reindeer Experiment Station, and L. J. Palmer, in charge, has been occupied in directing construction of corrals, pasture fences, and much-needed buildings in which feeding experiments can be conducted more satisfactorily. Several reindeer have recently been added to the experimental herd, and good progress is being made in the study of feeding and management practices. W. B. Miller, assistant grazing examiner in Alaska, has been employed in making surveys of grazing resources, coaching reindeer producers in improved methods, and establishing new observation quadrats, as well as studying results obtained on those that have been in operation for some time.

George G. Cantwell assisted by Paul Trapier completed a three months' collecting trip in Arizona, returning to Palms, Calif., early in July. Despite much unfavorable weather, a fine series of bird and mammal specimens was procured and valuable data obtained to clear up obscure points regarding occurrence and distribution problems. This work was done to round out collections and information needed to complete a report on biological conditions in that State.

Frederick C. Lincoln, who holds a commission as first lieutenant in the Signal Reserve Corps, was on duty at Fort Monmouth, N. J., July 1 to 14. This army post is the Signal School to which officers are sent from all branches of the military service. While on duty, Mr. Lincoln was called upon to explain and demonstrate the military use of the homing pigeon. Although limited to one-way communication, the birds used in the World War made a record of efficiency between 97 and 98 per cent, surpassing all other methods for the transmission of army information under battle conditions. In common with other army posts, Fort Monmouth is a bird reservation, and Mr. Lincoln reports that native birds were abundant. Yellow-billed cuckoos were particularly numerous, probably because of an infestation of tent caterpillars there.

E. A. Preble and A. H. Howell spent a short vacation together at Ossipee, N. H., during July.

Miss Ruth Richards left early in July for an extended trip in Europe.

E. R. Scholl has been enjoying a vacation at points in Pennsylvania and New Jersey.

ECONOMIC INVESTIGATIONS

In collaboration with Arthur Hawthorne Carhart, former recreational engineer of the U. S. Forest Service in the Rocky Mountain District, Stanley P. Young has written a series of wolf stories under the title "Renegades of the Range Land." This series gives a true account in chronological order of the killing of the last nine renegade wolves in the Colorado district under the direction of the Biological Survey. The stories will first appear in the Red and Blue Book Magazines, and later in book form.

The death of Hunter Lloyd Raglin from heart failure early in June is reported by Chas. G. Poole, leader of predatory-animal control in California.

R. K. Stewart, assistant leader of predatory-animal control in California, left early in July for his new position in Alaska, where he will assume leadership of predatory-animal control in that Territory. His leaving causes a general change in supervision details in the California district. Wm. F. Polson will assume Mr. Stewart's duties, while John G. Traub in turn takes Mr. Polson's place.

Hunter R. C. Giles, of Colorado, took two bears during the last week in June, one of which was an exceptionally large brown bear and very old, as evidenced by the condition of its teeth and feet. Its skull is considerably wider than any now at the Colorado office. These two animals had for some time been preying regularly on sheep.

One of the outstanding pieces of work in California in June was done on a ranch in Lake County by Hunter Ralph Hicks, who captured a coyote that has evaded hunters for two or three years. It was one of the most vicious and persistent killers that Survey hunters have had to contend with during the entire time that predatory-animal control has been in operation in that State.

At the meeting of the Cache Woolgrowers Association of Idaho, held at Bancroft on June 21, stockmen expressed their approval of the Bureau's predatory-animal control work and raised the assessment from 5 cents to 6-1/2 cents a head on sheep to carry on next year's campaign.

A noteworthy achievement in Oregon was the trapping on June 27, by assistant leader Elmer Williams, of the notorious Sycan wolf in a blind set. Mr. Williams, as well as Hunter Carl Pitcher and a number of private hunters and trappers, has expended considerable time and effort during the past year in the attempt to capture this animal. It was an old male and practically white in color, and has been credited with killing a great number of cattle and some horses over a period of 12 years.

Hunter H. J. Axlund, of the South Dakota district, reports trapping a female coyote that was carrying five meadowlarks to its den of young. Hunter Lewis N. Stone recently took a badger that had killed 30 chickens.

Hunter W. W. Nicley, working at Colfax, Whitman County, Wash., trapped an old female coyote that was known to have killed 10 lambs belonging to a rancher of Lacrosse, Wash.

D. D. Green, junior biologist in Colorado, spent the month of June in the San Luis Valley working with the crews on prairie-dog eradication work and in Rio Grande County on rabbit control. Excellent results have been reported with the use of strychnine alkaloid and green alfalfa; some of the farmers picked up as many as 100 dead rabbits around their places.

Members of the personnel of the Office of Motion Pictures spent a week in the Kansas district during June taking a two-reel pocket-gopher picture. Close-ups were taken of pocket gophers working in a glass-front cabinet, as well as profile views of actual runways, mowing scenes, and demonstration meetings. There remains to be taken a few fall scenes of actual pocket-gopher infestation on a wide scale.

Roy Moore, junior biologist in Kansas, was on leave the greater part of July taking summer-school work at Kansas State Agricultural College, at Manhattan. During the week of July 11 to 16 he made an inspection trip in Sherman, Cheyenne, and Rawlins Counties.

I. N. Gabrielson, leader of rodent control in Oregon, spent four days during the month in Corvallis lecturing on rodent-control work to the Boys and Girls' Clubs in the Summer School in session there. The 500 boys and girls in attendance were the pick of the club workers over the State.

L. C. Whitehead, leader of rodent control in Texas, made a trip to Beaumont during the month to investigate certain rat infestation reported as done by the "cactus" rat. It proved, however, to be the cotton rat, which has been doing considerable damage, particularly to melon crops in the sandy areas south of Beaumont near Port Arthur, Tex. Dozens of truck farmers were forced to replant their melons, which prevented them from getting the top prices on the first-crop market. The loss was estimated at between \$6,000 and \$8,000.

A large poultry farm in the vicinity of Fort Worth, Tex., has lost 800 young chicks from rats this year. In cooperation with county agents, relief was rendered and instructions for rat control given the manager of the ranch, under the direction of Mr. Whitehead. The plant of a candy company in Fort Worth was inspected as a follow-up of previous operations. Assistance was also given in Clarksville, Tex., on a turkey farm where rats had destroyed \$250 worth of young turkeys and chickens, in addition to 150 bushels of corn in the crib.

An outstanding activity in the Texas district in June was the taking by Hunter R. H. Blaylock of the last four notorious wolves in Mason County. These animals, according to the secretary of the local wolf club and various stockmen, had depredated over a territory of about 20,000 acres in Mason County for the past four years and during that period had occasioned losses of at least \$7,500. There were several local trappers in the county working for bounties of \$150 for each wolf, but these men were unable to catch any of the four. The secretary of the wolf club states that the money paid Mr. Blaylock since he began working in that county last fall has been the best investment that the club has made since it was organized six years ago. Mr. Blaylock received his entire salary from the club during the time he was working in Mason County.

Leo K. Couch, leader of rodent control in Washington State, has investigated the rat problem at the State Training School at Chehalis and has given a poisoning demonstration before the superintendent and head poultryman of the institution. Rats had cost the State a loss of 200 fair-sized chickens.

Congratulations are extended to Mr. and Mrs. Galen C. Oderkirk, who were married at Buffalo, N. Dak., on July 3. They are now at home in Lafayette, Ind., where Mr. Oderkirk, who is junior biologist of the eastern rodent-control district, has had his headquarters for the past two years.

FOOD HABITS RESEARCH

Although high water and delay in the delivery of a canoe hampered the botanical survey work on the Upper Mississippi River Wild Life Refuge at the outset, F. M. Uhler reports progress in this project.

Observations made at the experimental farm of the Bureau of Plant Industry at Bell Station, Glenn Dale, Md., indicate that facilities offered for the nesting of birds are being more extensively used this season than last. Wrens, starlings, bluebirds, martins, English sparrows, a flicker, and a deer mouse are the vertebrate tenants thus far this season.

FUR RESOURCES

Monroe Green was in New York City early in July and conferred again with representatives of the American Railway Express Company regarding the reduction of express rates on live and dressed rabbits. From New York City he went to Saratoga Springs, N. Y., to inspect the progress being made on the new rabbit building and to discuss other work with Dr. Karl B. Hanson at the Experimental Fur Farm.

George van der Bellen, of the Zoological Institute of Esthonia at Tartu-Dorpat and organizer of an experimental fur farm in Esthonia in cooperation with the University of Dorpat (Tartu), spent July 9 and 10 at the Experimental Fur Farm studying the experimental work being carried on there in raising fur animals in captivity.

Two male martens have been purchased for experimental breeding work at the farm. One of these is an exceptionally fine specimen with an extra dark and well-furred pelt.

There is a fine stand of catnip at the Experimental Fur Farm this year. A representative from the Bureau of Plant Industry will go to the farm this month to extract oil from the catnip to be used in predatory-animal control work.

Bridgewater Arnold, cooperator of the National Association of the Fur Industry, was in the office on July 7, assisting in checking the information thus far compiled on the State laws pertaining to fur-bearing animals. Mr. Arnold resigned his position with the National Association on July 11, and is succeeded by Horace J. McMullen, a former employee of the association who cooperated in assembling the statistical data on fur resources and the fur trade published in its 1925 Yearbook. David C. Mills, of the National Association, visited the office on July 1.

Mrs. Grace Marshall, senior typist, resigned on June 30, and is now living in Akron, Ohio.

Miss Elsie Galloway, of this Division, has been appointed corresponding secretary of the National Women's Overseas Service League by the newly elected president of that organization, in session at Denver, Colo., on July 19.

GAME AND BIRD RESERVATIONS

Western sportsmen are cooperating with the Department of Agriculture by creating a fund to be expended under the direction of the Biological

Survey for the improvement of conditions affecting migratory birds at Lower Klamath Lake, in northern California, Malheur Lake, in east-central Oregon, and the delta of the Bear River, in Great Salt Lake, Utah. It is planned to make a thorough investigation of the practicability of constructing dikes and other control works necessary to provide adequate refuges for waterfowl in these three of their important western resorts. The funds thus made available by sportsmen will enable this Bureau to cooperate with the Bureau of Public Roads in the preliminary investigations. With these as a basis, measures can be taken to restore for the birds as far as possible conditions that formerly existed.

Investigations at Lower Klamath Lake will seek to ascertain the cost and best location of a dike, if authorized, to flood a part of the lake, now dried up by evaporation. Evaporation and other changed conditions have so reduced the water supply in Malheur Lake that it is insufficient for the birds formerly attracted there. One of the engineering problems involved is to maintain a fair-sized lake, but one that admittedly must be smaller than formerly. The construction of a dike at the delta of Bear River, in Great Salt Lake, will result in the permanent maintenance of many thousands of acres of the finest kinds of wild-duck feeding grounds and will prevent alkaline waters making it a death-trap for the multitudes of birds that use it as a breeding ground as well as a stopping place during migration.

L. M. Winsor, associate irrigation engineer of the Bureau of Public Roads, has been transferred temporarily to the Biological Survey to make the survey necessary in connection with the improvement of conditions at Bear River.

Mr. Goldman is on a field trip in western States visiting various game and bird reservations, including the Upper Mississippi River Wild Life Refuge; Wind Cave Game Preserve, S. Dak., Belle Fourche Bird Refuge, S. Dak.; and Big Lake Bird Refuge, Ark. He will also visit the Bear River Delta, Great Salt Lake, Utah, where the cooperative survey work is to be carried on this summer.

McKay Creek Reclamation Project Reservoir, Umatilla County, Oreg., together with small legal subdivisions of adjoining land, has been made a Federal Bird Refuge by Executive order of June 7, 1927. This reservoir, about six miles southwest of Pendleton, Oreg., will provide a good resting ground for waterfowl. The refuge itself is not a specially good feeding ground, although there are excellent feeding grounds in the adjacent region. The lands included in the refuge are under the jurisdiction of the Department of the Interior for reclamation project purposes and the reservation of these lands as a bird refuge is subject to the use thereof by that department, including leasing for grazing, and to any other valid existing rights. The protection of birds thereon, however, is by the Biological Survey.

Regulations for the administration of the Upper Mississippi River Wild Life and Fish Refuge were signed and issued jointly on June 24 by Secretary Jardine and Secretary Hoover, of the Department of Commerce. These regulations prescribe the conditions under which hunting and other recreational activities, including fishing and camping, will be permitted

on the reservation, the general plan being to allow the public the freedom of the refuge as far as possible consistent with the conservation of the wild life protected there. The danger from neglected camp fires is especially stressed.

Through the cooperation of South Dakota game officials and interested individuals, seven young antelope fawns have been obtained for Sullys Hill Game Preserve, N. Dak., from Slim Buttes Antelope Preserve, S. Dak., a State Reservation. Wesley D. Parker, warden of Sullys Hill Game Preserve, on May 30, went 455 miles from Sullys Hill to Slim Buttes, near Buffalo, S. Dak., to obtain these young antelope, which were picked up on the open range and brought in gunny sacks to Slim Buttes Preserve, where they were placed in an inclosure and fed on the bottle. Great care was taken in feeding them and most of the antelope became quite tame. On June 12 four females and three males were placed in a crate with separate compartments and taken by auto truck to Sullys Hill. The latest reports indicate that the young antelope are thriving, as they are drinking almost a quart of whole milk each three times a day and eating grass and some oats.

Warden Almer P. Nelson, of the Elk Refuge, Wyo., reported on July 2 that there were still a few elk making their home on the refuge. On that morning two yearlings, three cow elk, and one calf were pasturing in the meadow near headquarters. These elk were staying on a small butte within the refuge, coming out onto the meadows at night.

The antelope herd at Niobrara Reservation, Nebr., has been increased by the birth of two fawns.

The first increase in the mountain sheep this season at the Bison Range, Mont., was observed on June 9. One young lamb, two days old, was picked up on June 11 and brought to headquarters in an attempt to raise it as an exhibit for State fairs next autumn. It did well for a couple of weeks, but the cow's milk fed it failed to agree with the little animal, and it died on June 24. Seventeen lambs are now in the herd of mountain sheep on the Bison Range.

A yearling buck mountain sheep ranged with a band of domestic sheep about five miles southeast of Ravalli, Mont., in the vicinity of the Bison Range, during the spring. It is possible that this buck escaped from the Bison Range, or it may have come from some herd of mountain sheep, the existence of which is unknown in the region.

On the 4th of July, 1,884 persons visited Sullys Hill Game Preserve, N. Dak. The roads are now in good condition in the vicinity. Five bunches of young wild ducks have been seen on Sweetwater Lake within this preserve, and the six young wild geese, which were hatched by a domestic hen, are larger than adult mallard ducks.

A boat house has been built at Belle Fourche Bird Refuge, S. Dak., to house the Government boat recently purchased for use there.

Warden W. R. Jones, of North Platte Bird Refuge, Nebr., reports that small gulls, which have been coming to the refuge in great numbers in previous years, were late this year, the first ones arriving about June 26. There are fewer birds of this species at this refuge than usual at this season.

Roseate spoonbills have appeared again on Tarpon Key, within Indian Key Reservation, of the Tampa Bay Group, Fla., after an absence of two years.

Large numbers of grasshoppers are present in the vicinity of Burns, Oreg., and about Lake Malheur Bird Reservation. Settlers in the locality are campaigning against the insects by poisoning them. Latest reports from G. M. Benson, warden of Lake Malheur Reservation are to the effect that the grasshoppers are swarming east of headquarters and for about three miles along the southern border of the refuge. Gulls in large numbers have appeared on parts of the infested area, and it is believed that they will feed on the insects and save much pasture and hay land.

The water at Lake Malheur has spread over a large portion of the lake bed, so that the motor boat can now be used with safety. Warden Benson made his first trip in the motor boat in three years over the refuge on June 24. He states that all the birds appear to be thriving except the pelicans. Their colony was completely destroyed before the eggs were hatched. It is believed that coyotes waded the shallow channel before the water had risen enough to prevent such depredations. On June 9 Warden Benson visited the meadows where snow geese were reported doing damage but found these areas in excellent condition and the grass of better quality where the geese had worked than where they had not.

Warden Chas. M. Conger, of Conconully Bird Reservation, Wash., reports that killdeer are nesting on the refuge in large numbers and that nongame birds are becoming more numerous there each year.

Congratulations are extended to Mr. and Mrs. George M. Benson, who were married at Burns, Oreg., on June 18.

Miss Lena M. Comstock has been appointed stenographer at the Winona (Minn.) office of the Upper Mississippi Refuge.

IMPORTATIONS

Dr. T. S. Palmer is spending an extended vacation at his former home in California. While in the West he expects to visit some of the principal cities in California and also Seattle, Wash., Portland, Oreg., and several Provinces in Canada.

During the month several shipments of black-bear cubs were imported from Canada, permits being issued for the entry of 38 of these animals.

most of which were shipped from Portage La Prairie, Manitoba. Six Russian brown bears were brought in at the port of New York from Germany. Seven elephants and one hippopotamus were also imported from Germany during June.

W. De Witt Miller, of the American Museum of Natural History, New York City, took over the work of inspections of foreign birds and mammals at the port of New York on July 1, relieving for a six months' period B. S. Bowdish, of Demarest, N. J., who has been making the inspections since December 1, 1926.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Talbott Denmead spent June 22 and 23 in Norfolk, Va., where he conferred with U. S. Game Warden W. L. Birsch and U. S. District Attorney Paul W. Kear and attended the trial of State Deputy Game Warden A. F. Mercer charged with the killing of two game-law violators on February 4 on Back Bay, Va. Warden Birsch and State Deputy Warden J. T. Capps, who were with Warden Mercer at the time of the shooting and who also fired at the violators in self defense, were present. The same charges are pending against these two wardens. Mr. Mercer, who was tried separately, was found guilty of murder in the second degree and was given a penalty of ten years' imprisonment. A motion for a new trial was filed by attorneys for Mr. Mercer on the grounds that the verdict was against the weight of the evidence and contrary to the instructions of the court. A hearing on this question was held July 16, and the court on July 23 denied the motion. The counsel for the defense will take the case to the State Supreme Court of Appeals, and it is not anticipated that the matter will reach the higher tribunal until next spring.

The 26-foot light-draft runabout motor boat, built for the Survey at Eastport, Md., was completed the latter part of June and brought to Washington, D. C., by W. R. Dillon and a member of the U. S. Coast Guard, who rendered valuable cooperation in connection with the construction of the boat. The boat has been named Sora and will be shipped later to Warden K. F. Roahen at Peoria, Ill., for use on the Illinois River.

Warden O. D. Steele, of Council Bluffs, Iowa, was in the Washington office July 6 to 9. Mr. Steele spent his vacation in Boston, Mass., and returned to headquarters via Washington for a consultation on matters relating to the enforcement of the migratory-bird treaty.

Warden W. L. Birsch was on duty in Washington, D. C., the first three weeks of July assisting Capt. Moody Creighton on the Survey boats.

Mr. and Mrs. C. F. Asmuth, of Milwaukee, Wis., called on members of this Division on July 8. Mr. Asmuth was formerly a United States game warden.

U. S. Deputy Game Warden Lawrence Mott, of Avalon, Santa Catalina Island, Calif., visited the Washington office on July 11 and conferred with Mr. Sheldon.

Warden J. V. Kelsey, of Daytona Beach, Fla., writes that during the week of June 5 to 11 that section was visited by heavy rains that brought relief from an alarming situation, as there were many fires raging, including the large Everglades fire, which has been burning for months. Mr. Kelsey reports, under date of June 17, that about 200 least terns had just completed a nesting period well within the limits of the city of Daytona Beach, the eggs being laid upon bare sand that had been pumped out of the river bed. He stated that many persons visited the place during the period the birds were nesting but molested neither nests nor birds so far as he was able to determine.

Mrs. Margaret B. Leonard, clerk in this Division, is spending a month's vacation at her home in Bangor, Me. Mrs. Burnetta E. Muth, dictaphone operator, visited her sister in New Rochelle, N. Y., the first two weeks in July.

Warden T. T. Bloxsom reports that on June 9 he found a dead whale about 58 feet long on the beach of Chincoteague Island, Va.

Cases Terminated -- Reports Received During June

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Bloxson, White**, Collins**	1	Maryland	Selling ducks	\$2
Clarkson	1	Texas	Possessing ducks and snipe in close season	\$50 and 1 day custody of marshal
Creighton*, Stadlmeir	1	Maryland	Killing ducks from a motor boat	\$2
Fleming*, Randall**	3	Indiana	Hunting ducks from a motor boat	\$1 each and costs
Hilliard	2	New Jersey	Killing wood ducks	\$5 each
Hilliard, Pierce*	3	"	Hunting ducks after sunset	\$5 each
" "	1	"	Killing a heron	\$10
Holmes, Korb*	1	Nebraska	Hunting ducks after sunset	\$5
Pacetti***	1	Florida	Trapping robins	\$5
Riddick	1	Texas	Possessing sandpipers	\$5
Riddick, Thomason*	1	Arkansas	Killing a dove in close season	\$5
Roahen, Scholler*	1	Iowa	Possessing ducks in storage in close season	\$10
Steele, O. D.	3	Iowa	Hunting ducks after sunset	\$10 each
Steele, R. C.	1	Washington	Possessing a woodpecker	25 cents

* U. S. Deputy Game Warden
 ** Deputy State Game Warden
 *** Former U. S. Game Warden

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

U. S. Department of Agriculture

Vol. 8

Washington, D. C., August 31, 1927

No. 8

GENERAL NOTES

Mr. Redington spent most of July in western States visiting various field offices of the Bureau and conferring with field men and cooperators. At Valentine, Nebr., he inspected the work at Niobrara Game Reservation under the direction of Warden Fred M. Dille, and in company with Mr. Goldman visited Warden A. P. Chambers, of Wind Cave Game preserve, S. Dak. At both reservations Mr. Redington was impressed with the necessity of taking steps soon to reduce the surplus numbers of elk. In the fenced pasture of 4,000 acres on Wind Cave Preserve they have eaten practically all the browse forage and are seriously damaging yellow-pine reproduction. An additional area to be fenced here will give the buffalo and elk about 5,000 more acres on which to graze.

In Wyoming Mr. Redington was particularly concerned with the rodent and predatory-animal control work, and traveled in all but four counties of the State in company, respectively, with A. M. Day and C. J. Bayer, leaders in rodent and predatory-animal control in that State. He interviewed many stockmen, farmers, and State officials and on July 19 addressed the Wyoming Wool-growers Association at its annual meeting at Lander on this phase of the Survey's activities. It was found that although the past winter was a hard one there were not many cases of elk starvation in Wyoming and that antelope are reliably reported to be rapidly increasing. Arrangements were made with several station observers in Wyoming to take censuses of waterfowl on certain of their concentration areas, as a part of the country-wide waterfowl census being conducted by the Biological Survey.

At Denver Mr. Redington spent two days in conference with L. L. Laythe, leader of predatory-animal and rodent control in Colorado, and with S. E. Piper, of the eradication methods laboratory. He also conferred with J. A. McGuire, editor of OUTDOOR LIFE. In St. Louis he visited Clark McAdams, of the ST. LOUIS POST-DISPATCH, who has long been interested in the migratory-waterfowl activities of the Survey and who is a member of the Migratory-Bird Treaty-Act Advisory Board.

Mr. Redington returned to the office on August 1. On August 27 he left for field offices on the Pacific coast and in Alaska and will return to Washington about the first of October.

Mr. Redington, Doctor Fisher, Mr. Sheldon, and Mr. Ashbrook attended the 21st annual meeting of the International Association of Game, Fish, and Conservation Commissioners at Hartford, Conn., on August 10 and 11. They report a fine spirit of cooperation manifest at the conference. Resolutions adopted by the commissioners recommended that Congress make suitable appropriations for the enforcement of the Hawes law, providing for the better protection of black bas;

further protection of fur-bearing animals by State legislation; a Federal law prohibiting the shipment of devices for the taking of game or fish in violation of any State law; the modification of the tariff act to permit the importation of game birds for stocking purposes free of duty; the elimination of conflict between State and Provincial laws and the migratory-bird treaty, as affecting non-game birds; the continued education and training of the youth of the country in nature study and conservation; the enactment of Federal laws under the migratory-bird treaty to insure adequate refuges for migratory birds; the appropriation of Federal funds to remedy such conditions for migratory birds as exist at the Bear River Marshes, Utah, and at similar places; that the conservation of wild life and the improvement of recreational activities be given due consideration by Congress in its flood-control program; that all game birds and animals be handled under the same tariff as poultry and pigeons, in order that various States may continue their restocking programs without paying the excessive rates now imposed. By resolution also a committee was authorized to formulate and present for adoption at the next meeting a code of sportsmanship and wild-life conservation, as necessary to the orderly and sane progress of game administration and legislation of the several States. The next meeting of the association will be held in Seattle, Wash.

The death of Louis Agassiz Fuertes, well-known naturalist, teacher, and artist, which resulted from a railroad crossing accident near Unadilla, N. Y. on August 22, came as a shock to his many friends in the Bureau. Mr. Fuertes, as an unexcelled artist of natural-history subjects, was illustrator of many publications of the Biological Survey, including Farmers' Bulletin 513, "Fifty Common Birds of Farm and Orchard," and several title-pages of the game and fur law bulletins. He was internationally known for having illustrated many important books on natural history and for his part in the execution of the bird-habitat groups at the American Museum of Natural History in New York City and in the New York State Museum at Albany. Mr. Fuertes, who was 53 years of age, was graduated from Cornell University in 1897 and at the time of his death was an instructor there. He had recently returned from Abyssinia, where he went as a member of an expedition sent out by the Field Museum of Natural History of Chicago.

Announcement has been made by Mr. Redington that at 10:30 on Tuesdays hereafter there will be a meeting of the chiefs of divisions, and their assistants when any of these assistants desire to attend, in the office of the Chief of Bureau to discuss freely all questions arising regarding the Survey's work and to keep all in touch with the operations and plans of the various divisions.

It has recently been learned that an employee of the Bureau who several years ago was apparently only slightly injured while on official duty neglected to report the injury, which later developed into more serious complications. Because of his failure to report the injury when it occurred, he has been unable to obtain compensation from the government for doctor and hospital expenses.

Mr. Henderson spent the month on vacation at Kennebunk Port, Me.

Miss Roberta M. Taylor, photograph file clerk, is on an extended trip with her sister in Honolulu, Hawaii. Mrs. Creola Wilson has been appointed temporarily as clerk during Miss Taylor's absence.

Johnstone D. Cockerille has been doing messenger duty during the absence of Raymond Watson.

The following publications of the Bureau have been received:

- "Effect of Rodent Poisons on Game Birds," by O. E. Stephl. Bi-925, 5 pp., Received July 27.
 "Revision of the American Lemming Mice. (Genus *Synaptomys*)," by A. Brazier Howell. North American Fauna No. 50, 38 pp. Received August 5.
 "Experimental Fur Farm of the Biological Survey," by Frank G. Ashbrook and Dr. Karl B. Hanson, Leaflet No. 6, 6 pp. Received August 10.
 "Game Laws for the Season 1927-28," by Frank L. Earnshaw. Farmers' Bulletin 1550, 46 pp. Received August 24.

Manuscripts have been received for outside publication as follows:

- Ashbrook, Frank G., and Karl B. Hanson. "Progress Report of Marten Breeding Experiments."
 Denmead, Talbott. "Restocking Versus Protection."
 Goldman, E. A. "The McKay Creek Bird Refuge, Oregon."
 Jewett, Stanley G. "Thomomys helleri in California."
 Kalmbach, E. R. "An Immigrant on Trial."
 Lincoln, Frederick C. "Traps for Bird Ringing."
 Malloch, J. R. "Description and Figures of the Puparia of Minettia ordinaria and Caliope flaviceps (Diptera)."
 McAtee, W. L. "Bird Nests as Insect and Arachnid Hibernaria," "Re Nomina Conservanda," and "Golf Clubs Owning Lakes Can Aid Waterfowl."
 Nelson, E. W. "Description of a New Species of Beaver."
 Oberholser, Harry C. "June and July Birds about Washington, D. C."
 Stephl, O. E. "Predatory Birds and Animals--Their Relation to the Rancher and to the Sportsman."

BIOLOGICAL INVESTIGATIONS

Vernon Bailey continued during the month his field work in Oregon. By the use of an automobile he was able to cover in a short time many points not available by the slower methods of travel years ago when some of the region was covered and to clear up numerous problems of distribution, as well as to note changes incident to increased settlement. His itinerary included Rome, Diamond, Burns, Canyon City, Prineville, Bend, Portland, Klamath Falls, Lakeview, Warner Mountains, Grants Pass, and Eugene. This trip has afforded opportunity to examine collections that have been formed largely in recent years and to confer with officials of several universities and experiment stations. The results will have an important bearing in his final report on the animal life and life zones of the State. Mr. Bailey returned to Washington on August 25.

Dr. H. C. Oberholser left Washington on July 25 for an extended trip in the West. After brief stops at Cleveland, Detroit, and Chicago, he went to McGregor, Iowa, to attend the sessions of the American School of Wild Life Protection from August 7 to 18. Doctor Oberholser had a prominent part in the program, after which he went to Montana and Utah in the interest of conservation and game protection, especially in connection with the waterfowl census that is being inaugurated with the cooperation of interested observers.

During the past few months there have been received several interesting returns from banded terns that were recovered in the West Indies and northern South America. Among these are three common terns banded at Tern Island, near Chatham, Mass., in July, 1926, and recovered from the island of Trinidad, during May and June, 1927. A Caspian tern banded July 1, 1925, at Gravelly Island, Mich., was retaken on June 7, 1927, on the Magdalena River, near Barranquilla, Colombia. This makes the fourth banded Caspian tern reported from this same area.

Theo. H. Scheffer has been giving considerable attention to the depredations of moles and rodents on bulbs, the culture of which is an important industry in western Washington. Narcissi have been little injured during the present season, but some beds of tulips have been almost totally destroyed by moles and by mice that follow their tunnels.

Early in August Dr. W. P. Taylor visited the experimental plots to cooperate with Forest Service representatives and officials of the Carnegie Institution in charting and recording results of rodent feeding in relation to forage growth.

The following members of the division were on vacation during the month: Dr. H. H. T. Jackson at Cape May, N. J.; Mrs. Jane S. Elliott at Philadelphia, Nova Scotia, and other northern points; Mrs. Frederick H. Mahlman in Nebraska; Miss Myra A. Putnam on a motor trip to Cliff Island, Me.; and Mrs. Bessie W. Palm also in Maine. John B. May was on military duty from August 15 to 27 with the District National Guard at Fort Humphreys, Va.

"Revision of the American Lemming Mice (Genus *Synaptomys*)," by A. Brazier Howell, was issued on August 5 as North American Fauna No. 50. The publication comprises the results of an intensive examination of 593 specimens of 11 forms of *Synaptomys*, chiefly in the Biological Survey collection, and of an exhaustive study of the literature of the subject. The information presented should prove of real help to students of systematic mammalogy. A bibliography of 82 titles includes most of the important papers published by English that refer to *Synaptomys*. Copies may be had on application to the Department.

ECONOMIC INVESTIGATIONS

Doctor Fisher left on his annual trip through the western range States on August 27. During his absence, until early in November, Stanley P. Young will be acting in charge of the division.

Hunter Carl Larsen, of the Arizona district, recently took an old bear that had previous to its capture killed a large cow. Evidently the cow had put up quite a fight, for the bear had signs of being hooked in the brisket.

Milton Diver, a hunter in the Colorado District near the Mancos section, succeeded in treeing an old bear that had evidently had acquaintance with traps before and had been shot at one time, as proved by scars on its feet and shoulder. This bear had shortly before its capture killed a number of sheep.

The head of one coyote killed in the extreme southern part of Grant County, Oreg., was examined by officials of the Oregon State Board of Health and found to be a positive case of rabies, the only report of rabies in Oregon during the month.

In a report of July 31, Hunter W. B. Elley, working on the Rosebud Indian Reservation in the South Dakota district, says that he had a good month and will leave the northeastern part of Todd County fairly clean of coyotes. He has captured the so-called 'Jones coyote', which has been doing damage in the community for about eight years. Because this animal was taller and grayer than the ordinary, which made it look white, it was called the gray wolf. It had killed recently a lot of pigs in an oatfield adjoining the pasture where Mr. Elley captured the animal. He has taken 62 coyotes from this same pasture and states that he has never seen so much poultry in coyote stomachs as these contained.

During July O. L. Coleman, assistant in predatory-animal control in the Texas district, conferred with the manager of a large estate and learned that the poisoning operations carried on under his supervision there last winter were so satisfactory with the owners, who control half a million acres of land in the country west of Vernon, that they have agreed to put up \$2,500 for future poisoning during the coming winter. The cost of this work will be borne entirely by the estate, with the exception of the services of Mr. Coleman, for possibly two weeks at the time the poisoned baits are prepared and distributed.

Hunter O. S. Robinson, of the Wyoming district, trapped an old three-footed female coyote on July 19 that had killed 30 sheep of one owner during May and June.

E. R. Sans, leader of predatory-animal and rodent control in Nevada, reports that a Japanese woman contracted tularemia during July while skinning rabbits in Lyon County.

I. N. Gabrielson, leader of rodent control in Oregon, reports that during July ground-squirrel control work in his district was brought to close, following the most effective year's operations in the history of that district. A total of 112,666 pounds of poisoned grain was distributed in the various counties. A far greater proportion of this went out early in the season, when the most results from a control standpoint are obtained.

A steady stream of requests for mole and pocket-gopher demonstrations continues in the Oregon district. With the increase in bulb culture and other intensively cultivated crops in the Willamette Valley, more and more attention is being paid to damage by pocket gophers, and indirectly by moles. Efforts will be made this fall to cover thoroughly the bulb-growing district in Oregon with method demonstrations, in order that the people may be able to fight these animals intelligently during the fall and winter, when most of the damage occurs.

During a visit to the Wyoming district by S. E. Piper, in charge of the eradication methods laboratory at Denver, the latter part of June, it was found that a weak poison mixture was very effective on ground squirrels. The standard formula calls for 1 ounce of strychnine to 13 to 16 quarts of oats. The new preparation cuts it to 1 ounce of strychnine to 30 quarts of oats. Later checks on this poison in Park, Fremont, Sublette, and Lincoln Counties by the poison crews show it to give equal results with the stronger mixtures. It will probably be used in all crew work next year, for it not only reduces the poison cost by a third but is less dangerous to livestock and bird life.

During July an investigation of prairie-dog conditions in Nebraska was made by Louis Knowles, leader in the South Dakota district, with a view to future rodent control in that State in cooperation with the Extension Service and the Nebraska Department of Agriculture. While he was in Nebraska he visited the Fort Robinson Military Reservation and poisoned a 100-acre prairie-dog town. A later report from Fort Robinson stated that five days after the poisoning was done there were but three prairie dogs remaining in the town.

R. K. Stewart, formerly assistant leader of predatory-animal control in the California district, reported for duty at Juneau, Alaska, on July 1. He will study predatory-animal conditions in the Territory pursuant to a cooperative agreement between Governor Parks and the Biological Survey. Latest reports from Mr. Stewart were to the effect that he was leaving for the interior of Alaska and would be out of touch with any means of communication until early in fall. While in the interior, he will have opportunity to study the wolf range in this part of Alaska, as well as to put into practice Biological Survey methods of wolf control.

Charles J. Bayer, leader of predatory-animal control in the Wyoming district, reports the taking of 12 bobcats in one month by Hunter Bert Laird, with oil of catnip as scent. This catch--the best bobcat record ever made in Wyoming--was accomplished on the lambing grounds of a rancher of Shoshoni, Wyo. These bobcats not only caused heavy depredations on the rancher's lambs but also killed the house cats around his ranch.

Mrs. Bessie M. Smith, of Washington, D. C., was appointed stenographer for the Washington headquarters of the Eastern Rodent-Control District, on August 2, by transfer from the Bureau of Naturalization, Department of Labor.

E. M. Mills, of the Eastern Rodent-Control District, following a series of talks at the junior short course at the Connecticut Agricultural College, at Storrs, Conn., has organized a woodchuck club of 4-H club members. This is a new venture in rodent control and if successful will be developed further next year.

A total of 223 rat-control demonstrations were given in the eastern district during the past year with an average attendance of 27. The average attendance in Indiana was 46. For demonstrations of all lines of extension work for the fiscal year 1924 the average was a little less than 13.

A rancher of Emmett, Idaho, reported to Luther J. Goldman, leader of predatory-animal control in that State, that out of 100,000 sheep he estimated his losses during the past year at between 15,000 and 22,000 killed by coyotes. Until recently this sheep raiser believed that he could kill his own coyotes but, after trying his system of employing local men for the job, has come to the conclusion that killing predatory animals is a job for a scientist, and he is now strongly in favor of putting all cooperative funds of the State and its wool associations under the direction of the Biological Survey. Mr. Goldman also reports that the Idaho State Sheep Commission is favorably inclined to cooperate in predatory-animal work with the Survey early in the coming year when cooperative funds from Idaho will be available.

An interesting fact relative to bounties on wolves has recently come to the attention of the Bureau. The State of Minnesota began paying bounties on wolves in 1878 and has continued to pay them until the present time. Between 1879 and 1927, Minnesota paid out a total of \$1,243,927 for wolf bounties. In 1926, the bounties amounted to nearly \$100,000. The largest annual bounty was paid in 1919, when \$124,446 was the sum total. In 1927 to date \$99,762 has been paid.

FOOD HABITS RESEARCH

C. C. Sperry is at present in southern Oregon studying the "duck sickness" that has again appeared among a few birds in that section. He aims to determine whether alkali poisoning is to blame and to settle definitely this question that has been a matter of much dispute. If alkali poisoning does

not prove to be the cause, cooperating bacteriologists will be called on to assist in solving the problem. Although symptoms exhibited by the birds have pointed to alkali poisoning, other circumstances have on some occasions tended to discredit such a diagnosis of the trouble at the Government Sump, Oreg., and Tule Lake, Calif., as well as at Malheur Lake, Oreg.

Good progress is being made by the botanical-survey party under the leadership of F. M. Uhler in studying and mapping the wild-fowl food resources of the Upper Mississippi River Wild Life Refuge; as well as by W. N. Keck and C. F. Stilwill, who expect to complete the lake survey of Minnesota this year.

FUR RESOURCES

Mr. Ashbrook was in New York City on August 2 and 3 conferring with officials of the National Association of the Fur Industry and of the Department of Commerce regarding a new division of fur statistics that is being established in that department. From New York he went to Saratoga Springs, N. Y., to inspect the work at the Experimental Fur Farm and to arrange a course of instruction for Dr. Earl Graves, a graduate of Kansas State Agricultural College, in matters relating to the handling of foxes and other fur animals.

Doctor Graves was at the Experimental Fur Farm from August 1 to 21 studying methods of breeding, feeding, and handling fur-bearing animals. He will sail in September for Juneau, Alaska, where he will be employed by the Territorial government to investigate fox-farming conditions in Alaska, in cooperation with the Biological Survey.

A new rabbit experiment station is being established at Fontana, Calif., in cooperation with the National Rabbit Federation and the Fontana Farms Company. The purpose of this station is to develop reliable information for rabbit breeders and for those contemplating raising rabbits as to the best methods of breeding, feeding, and housing these animals to produce both meat and fur of high quality. The cooperation of local and national organizations interested in the industry will be sought in conducting the experiments. The results will be for the benefit of rabbit raisers throughout the entire country. D. Monroe Green, who has been engaged in rabbit investigations for the past two years, will be in charge of the station.

The crop of catnip produced at the Experimental Fur Farm this year, for use in cooperative predatory-animal campaigns, is the largest that has been raised there. It has now been harvested and distilled. A little less than 48 ounces of crude catnip oil, making 40 ounces of refined, valued at \$100 an ounce, was produced on three quarters of an acre.

Dr. J. E. Shillinger, formerly associate veterinarian of the Bureau of Animal Industry, has been transferred to the Biological Survey to conduct investigations in epidemic diseases of fur animals. Plans have been made to cooperate with various research institutions in carrying on this work, and Doctor Shillinger will be stationed for a while beginning September 15 at the University of Minnesota.

Department Leaflet No. 6, "Experimental Fur Farm of the Biological Survey," by Frank G. Ashbrook and Dr. Karl B. Hanson, was made available for distribution on August 10. This leaflet describes the fur farm, its purposes and accomplishments, together with brief mention of the methods employed there in raising fur animals in captivity.

Dr. George W. Stiles, bacteriologist of the Bureau of Animal Industry, stationed at Denver, Colo., visited the Experimental Fur Farm on his return from the World's Poultry Congress and Exposition at Ottawa, Canada.

A representative of a felt-hat manufacturing company of Philadelphia visited the division on August 5. This concern is planning to introduce the coypu (nutria) from South America into this country and is seeking information on the proper habitat for these animals.

D. Mohroe Green returned to Washington on August 15, after spending some time in a hospital in New York, where he underwent an operation on his eye.

Miss Elsie Galloway, stenographer in this division, has been spending a short vacation at Mount Pocono, Pa.

Miss Louise Alexander has been appointed junior stenographer in this division effective August 15, to succeed Mrs. Grace Marshall, who resigned on June 30.

GAME AND BIRD RESERVATIONS

Mr. Goldman returned on August 6 from a western trip that included visits to various refuges and to the Bear River Delta, Great Salt Lake, Utah. L. M. Winsor, associate irrigation engineer, who has been transferred temporarily from the Bureau of Public Roads to the Biological Survey, met Mr. Goldman and took up with him on the ground details of further plans for a preliminary survey in connection with the construction of a dike across the northern part of Bear River Bay to create a fresh water area for the benefit of waterfowl. Louis T. Jessup, associate drainage engineer of the Bureau of Public Roads, has also been temporarily transferred to the Biological Survey to make investigations at Lower Klamath Lake, Calif. and Oreg., and Lake Malheur, Oreg., in connection with plans for improving conditions affecting migratory birds at these places. This work has been made possible through the cooperation of western sportsmen who have created a fund for such purpose.

On his way back from the West Mr. Goldman visited Big Lake Bird Reservation, Ark., which was in the path of the great flood in the Mississippi Valley. The entire refuge was covered with from 10 to 20 feet of water, much of which stood for more than two months. The flood was beneficial in killing many small willows that during abnormally low water in recent years had obtained a foothold and were cutting down the open water areas on the reservation. A considerable number of wood ducks were seen, and these birds appear not to have been troubled by the flood. Wild turkeys and deer, of which there were a small number on the reservation, were, on the other hand, forced out by the water, and no signs have been seen of them since the flood subsided. An unfortunate effect of the flood was that it prevented the development of the usual crop of aquatic plants, and it is feared that, owing to the absence of these plants, there will be a scarcity of duck food during the coming fall and winter seasons.

A band of 1,200 young turkeys, the property of a neighboring rancher, has been placed, under permit, on the National Bison Range, as a measure to control the grasshoppers that have been abundant the past few years on parts of the range. The owner of the turkeys has built a camp and roosting shed on wheels on the range, and his herder handles the turkeys in much the same way that a herd of sheep would be handled. The turkeys eat some grass and weeds, and quantities of grasshoppers--25 a day each, according to the herder's estimate, which is believed by Warden Frank H. Rose, to be a relatively small number. The forage saved by removing the grasshoppers adds to the available supply for the buffalo, and, at the same time, the turkeys are supplied with food. The buffalo do not molest either the camp or the turkeys, but the herder sleeping alone under canvas hears the grunting and trampling of the buffalo herd with some uneasiness.

O. E. Steph1, leader of rodent control in Montana, visited the Bison Range the first of August, planning for the control of range-destroying rodents there.

Work has been started on the new game pasture at Wind Cave Preserve, funds for the construction of which, amounting to \$18,000 are carried in the current appropriation to the Bureau. This game pasture will inclose about 4,000 acres and will about double the acreage of the preserve under fence within Wind Cave National Park and permit a considerable increase in the number of game animals that can be maintained there. The pasture will be used mainly for buffalo and antelope but will include some rugged territory suitable for mountain sheep that may be introduced.

From October 1, 1926, to July 30, 1927, there were 2,641 automobiles and 12,832 visitors at Sullys Hill Game Preserve, N. Dak., as compared with 2,593 cars and 10,246 visitors that came to the preserve from October 1, 1925, to July 30, 1926. This increase is due to improvement in road conditions in the vicinity.

The seven young antelope brought to Sullys Hill from South Dakota in June are thriving, and some of them have shed their first coat. Another buffalo calf was born late in July, making four calves at this preserve and a total of 17 buffalo in the herd.

Warden George M. Benson, of Lake Malheur Bird Reservation, Oreg., reports that while out on Cole Island within the refuge late in July he was surprised to find two antelope, the first he had ever seen on the refuge. These animals doubtless belong to some band that is ranging in the vicinity of the reservation. Mr. Benson states that there is no trace of the sickness that killed thousands of ducks in that locality a year ago, and indications are that there will be a large crop of ducks. The Canada geese are fairly well distributed in that locality, and large flocks of ducks were seen flying about the refuge.

MIGRATORY-BIRD TREATY AND LACEY ACTS

W. R. Dillon spent July 21 to 23 in Atlantic City and other points in New Jersey in connection with migratory-bird treaty act matters.

W. J. Tucker, game, fish, and oyster commissioner, of Austin, Tex., called at the Bureau on his return from the meeting of the International Association of Game, Fish, and Conservation Commissioners, at Hartford, Conn., and conferred with Mr. Sheldon and other members of the division.

Warden S. W. Linebaugh reports under date of July 8 that what was believed to be a blue goose was captured recently at Reelfoot Lake, Tenn., shortly after a storm, the bird being exhausted and its feathers water-soaked. It was turned over to the State game authorities.

Warden B. R. Britton, of Socorro, N. Mex., reports that several pairs of red-headed woodpeckers have been seen recently in his district and states that this is the first season he has noted them in any number.

Miss Frances Pierson took a ten-day trip the latter part of July to Niagara Falls and points in Canada. Miss Mary O'Brien is spending a month's vacation with relatives in New York and New Jersey. Both are stenographers in this division.

Cases Terminated -- Reports Received During July

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Riedinger*	1	Illinois	Hunting ducks from motor boat	\$15 and costs of \$35.15
" "	1	"	Killing a loon	\$15 and costs of \$38.25
Charlton	1	Ohio	Killing a loon	\$10
Mestel*	1	Illinois	Hunting ducks after sunset	\$15 and costs of \$35.15
"	1	"	Hunting ducks after sunset	\$15 and costs of \$35.
Mushbach, Steele, R.C.	1	Washington	Hunting ducks after sunset	\$5 and costs of \$20
Smith*	1	Wisconsin	Possessing coots in close season; also a heron	One day in jail
Smith, Wallace*	1	Maine	Hunting geese in close season	\$10
Steele	1	Oregon	Possessing ducks in storage in close season	\$5
Whitehead, Boggus**	5	Georgia	Killing ducks in close season	\$1 each
Whitehead, Rowland*	5	"	Hunting ducks in close season	\$1 each

Cases Reported for Prosecution

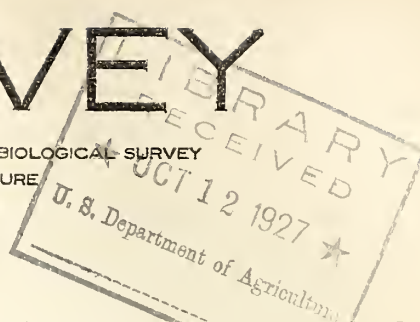
<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Farnham	1	New York	Selling live geese without a permit
Whitehead	2	Georgia	Killing wood ducks
"	2	"	Hunting wood ducks

* U. S. Deputy Game Warden

** Deputy State Game Warden

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



Vol. 8

Washington, D. C., September 30, 1927

No. 9

GENERAL NOTES

Mr. Redington returned to Seattle from Southeastern Alaska on September 24, after visiting the Bureau's office at Juneau, conferring with the Governor, and meeting Forest Service officials and others who are cooperating in the Survey's work.

Mr. Henderson on September 17 attended the annual meeting of the South Shore Nature Club at Cohasset, Mass., and addressed the club on the work of the Biological Survey and its activities in the conservation and control of wild life.

Lisle Morrison was in Rochester, N. Y., the first two weeks of the month superintending an exhibit of the Bureau at the Rochester Sportsman's Show of the local chapter of the Izaak Walton League of America, held in connection with a large exposition and horse show from September 5 to 10. The exhibit emphasized the importance of the conservation of wild life and the necessity for cooperation on the part of all. A liberal distribution was made of the game law bulletin for 1927-28 and of other publications of the Bureau.

Dr. T. S. Palmer represented the Bureau at the seventeenth annual meeting of the North Carolina Forestry Association held at High Point, N. C., on September 21 and 22 and gave an address on "Wild Life and Forestry."

A list of the personnel of the Biological Survey (Bi-945) similar to the one in the July, 1926, issue of THE SURVEY, is being prepared in mimeographed form, and one copy will be sent to each field station. A limited number of additional copies, if needed, will be sent on request, but only to members of the Biological Survey.

Mrs. Helen C. Wood, of the Distribution Office, spent her vacation during the month at Solomons Island, Md.

The following publication of the Bureau was issued on September 27:

"Directory of Officials and Organizations Concerned with the Protection of Birds and Game: 1927." Miscellaneous Publication No. 6, Compiled by Talbott Denmead. 12pp.

Manuscripts have been submitted for outside publication as follows:

- Couch, Leo K. "Small Mammals of the Yakima Valley, Washington."
 Gabrielson, Ira N. "Porky" and "Birds of the Oregon District: The Season."
 Goldman, E. A. "A New Wood Rat from Arizona," "The Kaibab or White-tailed Squirrel," and "The Fluctuation of Mammal Populations in Numbers."
 McAtee, W. L. "Insect Food of the Black-headed Gull," "Cormorants Again on Trial," and "Cases Where Birds Become Harmful, and Insects Useful, Factors in Economic Problems."
 Moore, A. W. "Superfotation in Peromyscus."
 Preble, E. A. "The Pig Pickerel of Pine River," "November in Nature," "December in Nature," "Review of Waelen's 'Wilderness Hunting and Wildcraft'," "Review of Warren's 'The Beaver: Its Work and Its Way's,'" and "Our Disappearing Fur Bearers."
 Rodington, Paul G. "Conservation and Control of Wild Life of Practical Value in Agricultural Programs."
 Silver, James. "Remove the Field Mouse Menace from Orchards."

BIOLOGICAL INVESTIGATIONS

Dr. H. C. Oberholser during late August and early September, continued on his projected trip in the interests of game protection and general conservation. His itinerary after the close of the sessions of the American School of Wild Life Protection at McGregor, Iowa, has included St. Paul, Minn.; Yellowstone Park, Wyo.; Helena and Missoula, Mont.; Brigham and Salt Lake City, Utah; and Memphis, Tenn. A large part of his work has been concerned with the organization of the volunteer personnel taking part in the nation-wide attempt to gain a better idea of the numbers of our waterfowl. Results from the counts made in various parts of the country on August 20 and September 20 have come in to the office in gratifying volume. The work, of course, has not yet progressed far enough to justify any definite conclusions.

O. J. Murie, who reached Jackson Hole, Wyo., early in July, for the purpose of making an extensive study of the southern elk herd, has made himself familiar with the region and its vegetation by a series of short trips. Working in the vicinity of Gravel Creek, a northern tributary of Pacific Creek in the game preserve northeast of Jackson Lake, he has been able to make a first-hand study of the elk in their summer home. He has also spent some time at the Great Basin Experiment Station, at Ephraim, Utah, gaining knowledge of the procedure of grazing investigations as a preliminary to actual studies in the Jackson Hole field.

Work by Dr. W. P. Taylor during August included inspection of the experimental plots at Seligman, Williams, Grand Canyon (Coconino Wash.), and at the Fort Valley Forest Experiment Station, near Flagstaff, Ariz. He also had many conferences with the officials of the Forest Service, the Carnegie Museum, and the Tucson Natural History Society. Work was also continued on several special projects, particularly the investigations on the porcupine and the jack rabbit.

By mid-September most of the office force had returned from their various vacation trips. The latest on the list were Miss Anna McDuffett, who visited the mountains of Pennsylvania, and Miss Emma Charters, who spent her vacation in Ohio and Pennsylvania.

ECONOMIC INVESTIGATIONS

Doctor Fisher so far on his western trip has visited the Kansas, Colorado, and Wyoming districts, where he has discussed various problems that have arisen with the leaders in charge, as well as making contacts with many State cooperators.

Charles J. Bayer, leader of predatory-animal control in the Wyoming district, reports that during July and August 300 dogs were killed in the city of Cheyenne. Twenty-six of these, on examination, proved positive cases of rabies. Mr. Bayer also reports that Hunter James McClure, of Hulett, Wyo., trapped an old wise coyote on a ranch, the owner of which felt that the capture of the animal was worth \$100 to him because of the damage it had been doing to this sheep.

R. Scott Zimmerman, leader of rodent control in the Utah district, recently exhibited at the Uinta Basin Industrial Convention a panel of skins representing injurious rodents of the Uinta district together with a background of mountain scenery and a field of grain on one side of a hill, with mounted rodents placed on the opposite side. The slogan carried with this display was "ON WHICH SIDE OF THE HILL ARE YOU?" Approximately 10,000 persons viewed the exhibit.

Mr. Zimmerman states that in spite of the harvest and the Uinta Basin Industrial Convention attractions, Field Assistant V. L. Johnson and the county agent were able to call out 199 farmers, who treated 93,500 acres, and in so doing used 3,040 pounds of poisoned bait. To date 248,500 acres of Federal land have been treated, and it has required 10,990 pounds of bait and the cooperation of 412 farmers, who assisted in treating Federal lands adjacent to their farms or communities.

Charles G. Poole, leader of predatory-animal control in the California district, reports a better spirit of cooperation so far this year than in any previous period, and that with the many calls coming in for demonstrative work in new counties relative to predatory-animal control, every dollar of available funds will be needed to keep up with the new projects.

John W. Crook, assistant leader of predatory-animal control in the Colorado district, had the misfortune of having his lead lion dog maliciously killed by the city manager of Monte Vista, Colo. Because of the splendid work Mr. Crook has been doing in southern Colorado with his lion dogs, he has obtained the good will of the stockmen and sportsmen. In January of this year with the aid of his dogs he succeeded in killing the largest lion ever taken by the Biological Survey in Colorado, the animal weighing over 200 pounds. When it became known that his dog had been killed, public sentiment against the city manager became so strong that it resulted in his discharge, and in addition Mr. Crook was reimbursed \$75 by the city of Monte Vista for his loss. Mr.

Crook has been connected with the Biological Survey ever since the Bureau began predatory-animal work in the West.

Louis J. Knowles, leader of predatory-animal control in the South Dakota district, reports that Hunter Jens Holst trapped two bobcats and one coyote in the game pasture on the Wind Cave Game Preserve. In addition to his trapping operations on this preserve, Hunter Holst placed 255 poisoned baits for coyotes and bobcats.

Chiefly because of lack of cooperation in keeping with the agreement between the Bureau and the South Dakota Department of Agriculture, predatory-animal control cooperation with that State was discontinued early in August by the Secretary of Agriculture. During the special session of the South Dakota legislature that adjourned on July 1, however, a game and fish commission was created, and the attorney general of South Dakota held that the administration of the South Dakota predatory-animal law came under the jurisdiction of this commission. The director of the commission requested the Survey to enter again into an agreement with the State through the game commission for the purpose of taking charge and administering the predatory-animal control work. As a result, a new agreement has been executed and approved by both the Department and State officials and is now in effect.

The Survey has entered into a cooperative agreement with the South Dakota Extension Service whereby the solution of rodent problems in that State will be attempted through those counties that have county agents.

George E. Holman, leader of predatory-animal control in the Utah district, commends Hunter Otis Dickinson for the action taken by him in the recovery of his traps and other hunting paraphernalia. Hunter Dickinson had some traps and other equipment, including a rifle, stolen from his camp during his absence last winter. He eventually gathered sufficient evidence to swear out a complaint and get a search warrant. Accompanied by the sheriff he searched the premises of the suspected party during August and found practically all the stolen property, together with articles that had been stolen from other persons. The man was taken before the local justice and fined \$50 and given a reprimand, which, no doubt will be sufficient to teach him that it does not pay to molest Government and State hunters' equipment.

Albert M. Day, leader of rodent control in the Wyoming district, in the near future is to work in cooperation with O. A. Beath, of the University of Wyoming, who is interested in establishing experimental grazing plots for the protection of grass samples for his laboratory work. The plots will be located somewhere near Laramie where the Wyoming ground squirrel is very destructive, and when established it is felt some excellent information will be obtained on just what damage these squirrels do to native grasses.

Mr. Day reports a successful piece of rodent work in the Dubois section. A total of 43,000 acres of mixed ground-squirrel and prairie-dog infestation was treated at an average cost of $7\frac{1}{2}$ cents an acre.

Ira H. Gabrielson, leader of rodent control in the Oregon district, reports that poisoning operations were continued during August on the Crater National Forest. Further surveys indicate that porcupine damage is pretty generally scattered through the yellow-pine districts of eastern Oregon.

Stanley G. Jewett, leader of predatory-animal control in the Oregon district, reports a positive case of rabies in the examination of a sheep head forwarded from Grant County to the State Board of Health.

According to Luther J. Goldman, leader of predatory-animal control in the Idaho district, the Fremont Woolgrowers Association has voted \$5,000 for the use of the Biological Survey for the coming season. The Caribou Woolgrowers Association voted a 3-cent tax on sheep, which will total about \$7,000 for use in the cooperative work of the Bureau.

A. E. Gray, leader of rodent control in New Mexico, reports that the results from the use of thallium, instead of strychnine, in the Moreno Valley have been excellent and almost all the prairie dogs have been killed. During two days' riding over approximately 30,000 acres only 15 live prairie dogs were seen on areas that had previously contained hundreds of them.

Leo L. Laythe, leader of rodent control in the Colorado district, reports the following instance of persons trying to get something at the expense of the Government: In the San Luis Valley a prairie-dog crew had poisoned a field according to instructions. Following this a complaint was registered that a horse and a mule had been killed as a result of poison put out by the crew. The persons making this complaint thought it possible to get reimbursement from the Government without any investigation on the part of the Survey. When the complaint was lodged, however, at the Colorado headquarters in Denver an investigation was made, from which it was determined that the two animals in question had died from other means than poison, and later evidence fully substantiated the fact that the horse and mule had both died before the poison had been put out.

G. C. Oederkirk, of the eastern rodent district, spent 20 minutes and used 2 pounds of calcium cyanide dust in wiping out an infestation of English sparrows in the vines covering the experiment station building at Purdue University. One hundred and sixty-two sparrows were killed. Mr. Oederkirk has also carried on an interesting investigation of blackbird damage in Winnebago County, Wis.

E. M. Mills, of the eastern rodent district, conducted a number of rat and field-mouse control demonstrations and visited a large number of extension workers in Maine, New Hampshire, and Vermont during August.

Odom Stewart, of Winchester, Tenn., was appointed junior biologist on October 6 for temporary service in the Eastern Rodent-Control District. His appointment is the initial step in providing rodent-control assistance in the Southeastern States.

A recent Associated Press dispatch from Fort Riley, Kans., is to the effect that Uncle Sam will harvest a good crop of hay on his Fort Riley reservation this year. It is anticipated that the harvest this season will total 9,000 tons, an estimated saving to the Government of \$47,000 for items of feeding and bedding. The eradication of pocket gophers in this area under the direction of A. E. Olson, leader of rodent control in the Kansas district, has greatly facilitated the harvesting of the hay crop.

Many of the leaders during August assisted Dr. H. C. Oberholser in the duck-census cooperative work being conducted by the Bureau. This cooperation is appreciated and has been of great aid in getting closer contacts with those areas where the census will be taken.

DIVISION OF FUR RESOURCES

Mr. Ashbrook attended the meeting of the Pennsylvania Fox Breeders Association, at Philadelphia, Pa., on September 12 and 13, and addressed the members on the fur-animal work carried on by the Bureau. On September 14 he spoke to the employees of the fur department of a New York concern regarding the work in fur resources. From New York he went to Chicago to attend the biennial convention of the National Association of the Fur Industry, held on September 15 and 16. He also visited Minneapolis, Minn., where he conferred with members of the staff of the University of Minnesota regarding a cooperative project on diseases of fur animals. From Minneapolis he went to Saratoga Springs, N. Y., and inspected the work at the Fur-Animal Experiment Station. Later, in company with Dr. Karl B. Hanson, he visited Bellows Falls, Vt., to attend the meeting of the American Fox Breeders Association.

D. Monroe Green attended the rabbit exhibition at Syracuse, N. Y., on August 31 and September 1, held in connection with the New York State Fair, and inspected animals and conferred with breeders regarding the progress being made in their work. The rabbit show was one of the largest ever held, with a large attendance and more than 700 animals of various breeds exhibited. Mr. Green left on September 15, for Fontana, Calif., where he will have permanent headquarters and direct the work of the U. S. Rabbit Experiment Station. He stopped en route at Pomona, Calif., to attend the rabbit exhibition in connection with the Los Angeles Fair and the convention of the National Rabbit Federation.

Dr. G. E. Shillinger was in New York City and Saratoga Springs, N. Y., on September 6 and 7. In New York City he conferred with scientists at the Rockefeller Institute of Medical Research regarding the work conducted by them on snuffles and other diseases affecting rabbits, and at the Fur-Animal Experiment Station he conferred with Doctor Hanson regarding epidemic diseases of fur animals and planned a continued series of experiments in anthelmintic treatment of foxes. On September 14 and 15, Doctor Shillinger attended the meeting of the American Veterinary Medical Association at Philadelphia. He left on

September 21 for Minneapolis, where he will have temporary headquarters and work in cooperation with the University of Minnesota in investigating outbreaks of diseases on fox farms and conducting research work in its laboratories on epidemic diseases of fur animals. While en route to Minneapolis he visited the Michigan State College of Agriculture, at Lansing, Mich., and the Bureau of Fur Acology and the Michigan Fox Breeders Association, at Grand Rapids, Mich., and inspected fox ranches in the vicinity of Milwaukee, Wis.

FOOD HABITS RESEARCH

C. C. Sperry reports a local outbreak of "duck sickness" in a flooded valley 10 miles west of Klamath Falls, Oreg. From this source he has been able for the first time this season to obtain a sufficient number of sick birds for observation and experimental purposes.

W. N. Keck and C. F. Stilwill have completed their season's work surveying the wild-fowl food resources of Minnesota lakes. The last week or ten days of their stay was spent in a study of the effect of fluctuating water levels on aquatic vegetation in certain lakes of Cass County. This was done in cooperation with officials of the State game commission.

F. M. Uhler and Paul Jaqua also are drawing their season's work to a close on the Upper Mississippi River Wild Life Refuge. After having surveyed all important areas on a southward journey through the refuge, they are now making observations of those of less importance on their return to Winona, where the work will terminate.

Success in attracting birds to the Experimental Chestnut Orchard at Bell Station, Md., is fully up to expectations. A bird bath, martin house, and 46 other bird boxes were placed there in 1926. In that year the following numbers of broods were in part or wholly successful: Purple martin, 3; bluebird, 4; and house wren, 10; total, 17. In 1927 with the same equipment these numbers rose to: Purple martin, 4; bluebird, 4; house wren, 18; English sparrow, 4; starling, 9; and flicker, 1; total 40. In 1926, 20 nests of tree-dwelling species, as catbirds, robins, etc., were found after the leaves were shed. If each of these produced a brood, a total for the $2\frac{1}{2}$ acre tract for 1926 was 37 broods, or 14.8 to the acre. If the same number of tree nests is reckoned for 1927 (they will be actually counted later), the total is 60 broods, or 24 to the acre.

GAME AND BIRD RESERVATIONS

A report from Warden A. P. Chambers, of Wind Cave Game Preserve, S. Dak., states that at the close of August there were 158 buffalo, 147 elk, and 22 antelope on the reservation. There were approximately 29,000 visitors at this preserve during August.

Warden Frank H. Rose reports that the National Bison Range now has a herd of 69 mountain sheep. This is a satisfactory increase from the 12 animals placed on the reservation in 1922.

Warden Wesley D. Parker reports that on August 7 there were about 1,100 visitors to Sully's Hill Game Preserve, and 78 on August 8. On Sunday July 24 there were 1,441 and on July 31, 1,562. Mr Parker says that the number of visitors is constantly increasing and that most of them stay several hours.

The seven young antelope at this preserve and the 17 adult and 4 young buffalo are doing well.

According to Warden George M. Benson the bird life at Malheur Lake Reservation is plentiful. He particularly mentions great numbers of young ducks, a flock of 200 curlews, 300 black terns, 2,000 Canada geese. Two antelope were on Cole Island in August--the first antelope known to have been on the reservation in many years. Almost no evidence has yet appeared of sick birds on this reservation. Gulls have been seen feeding extensively on grasshoppers.

H. W. Terhune, the Bureau's representative on the Alaska Game Commission, reports that during the two months that the new vessel Beaver has been in operation in Alaska, 29 cases of violation of the Alaska game law have been brought to light as a result of its patrol work. Seized furs with an approximate value of \$9,000 and collected back-license fees and fines, totaling \$1,300, have more than paid for the vessel in the two months. The Beaver is under the direction of Warden Frank Dufresne.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Chief Warden Sheldon returned to Washington on September 17 from a month's trip in the Northwest. He spent several days in Billings, Mont., and vicinity interviewing sportsmen and State game officials and visiting some of the wild-fowl areas in that region. At Helena, Mont., he conferred with State game officials and in company with State Deputy Game Warden Peasley and Dr. H. C. Overholser went over duck grounds at Lake Helena. Mr. Sheldon conferred with sportsmen and county game officials in Spokane, Wash., and visited wild-fowl areas in the vicinity. At Boise, Idaho, he had a conference with Governor Baldrige and State Game Warden Thomas and also attended a luncheon given by the local sportsmen and addressed the meeting. He was met by Warden R. C. Steele at The Dalles, Oreg., and motored with him to Portland, where he conferred with State Game Warden Clifford and spent some time going over records in Warden Steele's office and interviewing sportsmen. On September 7 he met Mr. Rodington and on September 8 they attended the annual conference of the Western Association of State Game Commissioners at Seattle, Wash., where Mr. Rodington made the principal address of the morning session. At the afternoon session Mr. Sheldon addressed the conference on game-law enforcement. He also addressed a meeting of the Seattle Business Men's Association on the same date; and on September 9 presided at the conference of U. S. game wardens, which was attended by

Wardens Steele, G. E. Mushbach, W. H. Ransom, and George Tenkin. Mr. Sheldon conferred with Warden B. J. Shaver at St. Paul, Minn., on September 11, and also called on officials of the Minnesota game commission.

Talbott Denhead attended the first State convention of the New Hampshire Division of the Izaak Walton League of America at Camp Sargent, near Peterboro, N. H., on September 2 and 3. The meeting was well attended, approximately, 1,000 being present the second day of the convention. Mr. Denhead addressed the convention on the work of the Biological Survey and made a report of the recent investigations of the loss by disease of grouse in the New England States. Motion pictures of the Department were exhibited.

An amendment to the Migratory-Bird Treaty Act regulations was approved by the President on September 6 changing the zones for shooting migratory game birds in Texas to harmonize with those recently created by the Texas legislature. The change was made in order that sportsmen in a portion of eastern Texas may shoot mourning doves, a privilege that was denied them by reason of the conflict between Federal and State zones, resulting from the recent act of the State legislature.

An order was issued by the Acting Secretary on August 17 permitting any person, when authorized by a permit issued by the Secretary and countersigned by the Chief of the Biological Survey, to kill, by shooting, such numbers of gulls and terns, not exceeding 50 in the aggregate of both, as may be necessary to abate the menace to public health and private property caused by these birds.

Warden E. B. Whitehead reports that there are a number of ponds in Mitchell County, Ga., where in late afternoons mourning doves come in to roost by the thousands. On August 10 he observed not less than 10,000 of these birds on one pond of about 20 acres and states that every tree and bush on the pond was full.

Warden W. H. Hoffman reports a large martin roost at Anniston, Ala. About sunset on August 9 he watched the incoming flight of these birds and states there were hundreds of thousands of them, the largest flight he had ever seen.

A resident of Wapakoneta, Ohio, who had previously raised wild fowl under a Federal permit but failed to submit the required report of operations and thereafter continued to make sales and shipments without the renewal of the permit, was arraigned in Federal court at Toledo, Ohio, on September 19, found guilty, and fined \$300 and costs.

Sympathy is extended to Mrs. Margaret B. Leonard, who was called to her home in Bangor, Me., on August 30 by the death of her father, William H. McCloskey, who passed away after a long illness.

W. R. Dillon enjoyed ten days' vacation during September, most of which he spent in East Orange, N. J. Frank L. Earnshaw recently returned from a ten days' fishing trip on the upper Potomac River near Williamsport, Md. Mrs. Jennie M. Whippo returned to the office on September 19 after spending three weeks in northwestern Pennsylvania and New York.

Cases Terminated - Reports Received During August

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Mushbach, Steele	2	Washington	Hunting ducks after sunset	\$25 each
Ranson, Walrath*	1	Idaho	Possessing a heron	\$25
Riddick, Thomason*	1	Arkansas	Killing ducks before half an hour of sunrise	\$10
Smith,* Hicks,* Rutherford*	1	Minnesota	Shooting at ducks from a motorboat	\$5
Steele	2	Washington	Possessing loons	\$10 each

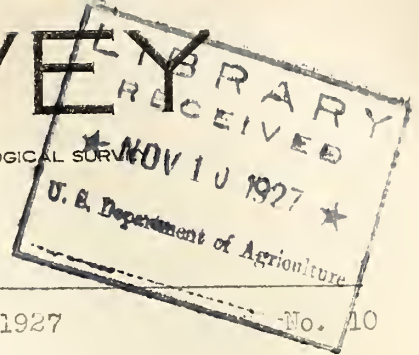
Cases Reported for Prosecution

<u>Warden</u>	<u>Case</u>	<u>State</u>	<u>Violation</u>
King,* Whitehead	1	South Carolina	Killing ducks after sunset

* U. S. Deputy Game Warden

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



Vol. 8

Washington, D. C., October 31, 1927

No. 10

GENERAL NOTES

Mr. Redington returned to Washington on October 5 from a six weeks' trip in the West and in Alaska, where he conferred with field men, cooperators, and others on the work of the Survey. At Ogden, Utah, he met G. E. Holman and R. S. Zimmerman and discussed with them and with cooperators the predatory-animal and rodent control situation in the State. With these leaders, Dr. H. C. Oberholser, and State Game and Fish Commissioner Madsen, he went to the Bear River Marshes and observed the numbers of birds there and the adverse conditions for wild fowl that must be overcome in connection with reflooding 100 square miles of territory near the mouth of the Bear River. At Reno, Nev., Mr. Redington visited E. R. Sans and through a short trip with him was enabled to meet several cooperators, including Governor Balzar, of Nevada, and to get a better understanding of the control work being done there. He spent three days in San Francisco and the bay cities in conference with Chas. G. Poole, Joseph Keyes, George Tonkin, F. E. Garlough, Joseph Dixon of the University of California, who is to undertake an investigation of the Bureau's predatory-animal work, and members of the Forest Service. He also conferred with the chairman of California Fish and Game Commission and with representatives of sportsmen's associations. At Sacramento he called on the director of the State Department of Agriculture and then proceeded to Portland, Oreg., and met the Bureau men there -- Stanley G. Jewett, Ira N. Gabrielson, and Ray C. Steele. On September 8 and 9 he addressed the annual meeting of the Western Association of State Game Commissioners at Seattle, Wash., and the Seattle Chamber of Commerce. Opportunity was also had to confer with Leo K. Couch, Dr. Glen R. Bach, and Game Wardens Tonkin, Steele, Ransom, and Mushbach, who were in Seattle to confer with the Chief and Mr. Sheldon.

On September 10 Mr. Redington left for Juneau, Alaska, stopping at Ketchikan for a few hours to meet officials there and to talk with fox farmers. He spent eight days in Juneau in conferences with Governor Parks and with Chairman Gardner and Executive Officer Terhune of the Alaska Game Commission, Forest Service officials, and others. On return to the States on September 24, Mr. Redington went to Corvallis, Oreg., in company with Mr. Gabrielson, for a conference with the Oregon State extension director and with the director of the Oregon Agricultural Experiment Station. He also called on Governor Patterson and had a conference with Senator McNary. He spent two days at Klamath Falls with representatives of the California and Oregon Fish and Game Commissions to discuss with engineers matters regarding the reflooding of Lower Klamath Lake. On his return east he spent one day with Mr. Goldman, Warden Frank H. Rose, and Lisle Morrison on the National Bison Range, Mont., and saw range conditions there, the numbers of buffalo, elk, and mountain sheep, and the fences, corrals, and other improvements.

The following publications of the Bureau were issued in October:

- "Beaver Habits and Experiments in Beaver Culture," by Vernon Bailey. Technical Bulletin No. 21; 40 pp., illus. Received October 22.
- "Migratory-bird Treaty-act Regulations and Text of Federal Laws Relating to Game and Birds," Service and Regulatory Announcement--D. S. 68; 15 pp. Received October 22.
- "Personnel of the Bureau of Biological Survey," Bi-945; 11 pp. Received October 24.

Manuscripts have been received for outside publication as follows:

- Bailey, Vernon. "The Desert Tortoise."
- Gabrielson, Ira H. "Bird Notes from the Badlanas of North Dakota" and "Birds of Oregon Region: The Season."
- McAtee, W. L. "Notes on 'Heteroptera or June Bugs of Eastern North America'."
- Mills, Ernest M. "How Not to Winter Rats."
- Oberholser, Harry C. "August and September Birds About Washington."
- Oderkirk, G. C. "New Methods Effective Against Rats."

Mrs. A. B. Morrison spent the first two weeks of October on annual leave at her old home at Morganton, N. C.

Dr. Tetsuo Inukai, professor of zoology at the Hokkaido Imperial University, Sapporo, Japan, visited offices of the Bureau on October 4 to investigate methods used in raising domestic rabbits in this country and also in the destruction of rats.

That the magazine supplements of Sunday papers are sometimes read has been amply demonstrated in the Biological Survey in the past few days, during which the offices have been practically snowed under with requests for information on rabbit raising, all from readers of a well-colored account of how "handsome furs will be no longer costly when the United States goes rabbit farming." Most of the requests are specific, calling for Farmers' Bulletin 1519 and Leaflet 4, for which the readers were told to write to the Biological Survey instead of to the Department of Agriculture. Some of the requests were almost tear-stained, from widows needing to increase their ready cash to support fatherless children, and some wanted Uncle Sam to supply breeding stock on the installment plan, the final payments to be made from the enormous but visionary profits anticipated. Needless to say, the Department does not have breeding stock for distribution, nor is its rabbit experiment station a move to go into "rabbit farming," but its stock of the pamphlets so much in demand has had to be replenished by special reprints.

Congratulations are extended to Paul H. Oehser of the editorial office on his marriage, October 4, in Chicago, Ill., to Miss Grace M. Edgbert, of Whittier, Calif. Mr. and Mrs. Oehser were classmates at Greenville College, Greenville, Ill., where they were both graduated in 1925. Mr. Oehser has been connected with the Biological Survey since June of that year.

BIOLOGICAL INVESTIGATIONS

Dr. H. C. Oberholser addressed the Biological Society of Washington at its first meeting of the season on the evening of October 22 on the subject "The Lure of the Waterfowl." His talk was illustrated with lantern slides.

Vernon Bailey, during the week of October 17, spent a few days at a beaver farm near Luther, Mich., where a beaver colony was planted four years ago. He reports that the animals are thriving and increasing steadily under favorable fenced restrictions. About 50 beavers are estimated now to inhabit the 100-acre inclosure, with ample food and room for four times that number. Some of the animals were trapped in a Biological Survey cage trap, and others were captured in a feeding corral with an automatic drop door, to demonstrate the ease with which these animals can be taken and handled. Mr. Ashbrook joined Mr. Bailey at the beaver farm and participated in trapping and handling the beavers and in photographing them. En route Mr. Bailey stopped at Sandusky Bay, Ohio, to examine the marshes on the property of a large shooting club as to their suitability for muskrat culture.

Dr. W. P. Taylor spent several days in the early part of September working on the experimental plots on the Santa Rita Range Reserve, Ariz. Considerable time was devoted to the preparation of his report on the relation of porcupines to the forest. During the latter part of the month he made a trip through eastern and southern Texas in the interests of conservation and general investigational and educational work.

Theo. H. Scheffer during September inspected a small colony of beavers planted in Mount Rainier National Park in August and found the animals doing well. He reports, however, that two colonies in the western part of the park that have been under observation for several years have been destroyed or driven away by operations incident to the construction of a new road. Studies of rodent damage to bulbs were continued, and arrangements have been completed to extend these investigations into California in cooperation with the State Department of Agriculture.

The opening of the fall season for migratory waterfowl has brought quick response from bird-banding cooperators:

Warden Frank H. Rose, of the National Bison Range, reports that up to October 17 he had banded about 1,400 ducks during the present season, most of which were mallards.

S. M. Batterson, of Mohler, Oreg., is making an effort to obtain a new trapping site on Tillamook Bay. His activities in past years have resulted in the banding of several hundred diving ducks, mostly lesser scaups.

H. S. Osler, of Toronto, Ontario, whose station at Lake Scugog, is one of the oldest and therefore most important, likewise is planning to give added attention to diving ducks. He has had constructed a new trap that should solve the problem of taking these birds in large numbers.

A recently reported bird-banding return of exceptional interest is for a song sparrow banded at McGregor, Iowa, on March 27, 1927, and retrapped on April 26, 1927, one day less than a month after banding, at the station of a cooperator at Branchport, N. Y. The west-to-east migration of this bird gives evidence of the remarkable character of some of the bird-banding data that are accumulating.

"Beaver Habits and Experiments in Beaver Culture," Technical Bulletin No. 21, by Vernon Bailey, was issued on October 22, and copies may be had on request to the Department. This bulletin supersedes Department Bulletin No. 1078, "Beaver Habits, Beaver Control, and Possibilities in Beaver Farming," and Miscellaneous Circular No. 69, "Construction and Operation of Biological Survey Beaver Trap."

ECONOMIC INVESTIGATIONS

News of the death of Hunter Glen Webley of the Washington district reached the Bureau late in September. Hunter Webley was one of the best hunters in the district and did efficient work in the rabies outbreaks there. In two different years he had taken more animals than any other hunter in the State.

There are now 25 counties in California where active cooperation is in evidence, with some work being carried on in others on a game protective basis, writes Chas. G. Poole, leader of predatory-animal control in that State. Funds available from counties to date amount to more than \$44,000, in addition to two counties from which may be drawn as much as is deemed necessary, or about \$4,000; in another county woolgrowers will make available between \$500 and \$1,000. It is probable that altogether a sum in excess of \$50,000 of county funds alone will be available for the year's work, with more forthcoming in several counties if necessary.

R. W. Young, a hunter in the Nevada district, took 114 coyotes and 12 bobcats in September, all with poison, which establishes a record for that State.

An active predatory-animal poison campaign was started on the holdings of a timber company in Baker County, Oreg., about October 12. The officials of the company have provided living quarters in the center of the district and have already gathered bait for poison stations. F. E. Garlough of the Eradication Methods Laboratory, one regular hunter, and a representative of the Oregon predatory-animal office are on the ground continuously, while a representative of the company is spending a part of his time there. This area comprises rolling, logged-off hills and small valleys at the headwaters of the Powder and Burnt Rivers. The entire area is used as sheep range during the summer months.

While riding on his trap line recently, Hunter Ray Huntley, of South Dakota, had the misfortune to have his horse stumble and in falling roll completely over him. In addition to the saddle, the horse was carrying

12 traps and a rifle. Mr. Huntley's back was so severely injured that he was off duty for two weeks, but he has now recovered.

J. M. Russell, of Halsey, Nebr., was employed on September 23 for pocket-gopher work on the Nebraska National Forest. During the last week of September he placed 48 poisoned baits and 252 trap settings and recovered 91 dead pocket gophers.

A. W. Moore, junior biologist, in Utah, has been cooperating with officials of the Forest Service in locating dens and poisoning porcupines on the Manti National Forest. Work was undertaken in the southern portion of the forest and at times carried the scouters to elevations of 10,000 feet. The Forest Service furnished two saddle horses and a forest ranger for the work.

D. D. Green, assistant biologist in the Colorado rodent-control district, was in charge of the Department of Agriculture exhibit at the Colorado State Fair, September 3 to 10, assisted by members of the Forest Service and the Extension Service. He reported fair attendance and considerable interest in both rodent and predatory-animal work. Mr. Green also reports that the rat condition in Denver is becoming serious. During the past summer one child was in the hospital for some time from wounds inflicted by rats. A woman reported that during the month she had lost three of her tenants from fear of rats in the neighborhood, although her own building was rat-proof.

Hunter W. H. Caywood was transferred early in September from the Colorado to the Washington district. He played a prominent part in the final clean up of renegade wolves in Colorado, and was one of the first hunters to be employed by the Biological Survey in the West when organized predatory-animal work was started.

"Vertebrate Pest News" is the title of a new mimeographed news-letter that is to be issued three or four times a year to cooperators in the sub-district including Indiana, Illinois, and Wisconsin, by G. C. Oederkirk, of the Eastern Rodent Control District stationed at La Fayette, Ind. It is intended to keep cooperators informed of the latest developments of rodent-control methods and of the progress being made in controlling rodent losses in the various parts of the district. Mr. Oederkirk will be glad to put the names of any of the rodent specialists of the Bureau on the mailing list to receive copies of the letter.

A rat-control exhibit prepared by a county agricultural agent under the direction of Mr. Oederkirk won first place at the Wisconsin State Fair. Live rats were exhibited in rotary cages, and a cornerrib and hog pen with rats in them were also shown. Rat-control demonstrations, conducted in the exhibit booth, attracted a great many persons.

S. E. Piper, of the Eradication Methods Laboratory, at Denver, Colo., devoted practically the entire month of September to cooperative operations in California. A special study of thallium as a possible field poison for use against the California digger ground squirrel under summer conditions was begun. Results and observations to date are encouraging and will go far to corroborate former statements and findings governing the recommendations and reservations of this material as a practical rodent poison. These experiments, according to Joseph Keyes, leader of rodent control in California, have been most interesting and instructive. Representatives of the California Fish and Game Commission, the Associated Sportsmen's Clubs of California, and of the University of California were present during the entire period.

Ira W. Gabrielson, leader of rodent control in the Oregon district, reports that among the most interesting problems worked on during the month was that of the silver gray squirrel in the walnut districts in Yamhill County, Oregon. These squirrels have been doing considerable damage, and have been worked on with two different methods of control. Poisoned green walnuts with strychnine have been quite effective in stopping the damage; trapping them unharmed has also been carried on with the idea of reducing the expense by selling the squirrels to parks and zoos. Mr. Gabrielson has been able, so far, to trap them quite readily and is learning to handle them without loss.

The wild-animal exhibit, arranged by the Fish and Game Commission of Montana, in cooperation with the Montana rodent-control office, was shown at several of the prominent fairs in the State this fall and received considerable comment from the public, as well as from judging committees. Some of the State legislators also expressed their appreciation and stated that it was one of the best educational programs put out by the commission since it started cooperating with the Biological Survey. This exhibit is paid for entirely by the commission and for the past three years has been a great attraction at the fairs.

FUR RESOURCES

Mr. Ashbrock left Washington on October 17 for points in Michigan and Minnesota where he visited fox and muskrat farms and beaver colonies. He stopped at the University of Minnesota and conferred with Dr. J. E. Shillinger and members of the university staff relative to the research work being conducted on the treatment and control of fur-animal diseases. From Minneapolis he went to Saratoga Springs, N. Y., to inspect the work at the Fur-Animal Experiment Station.

Dr. J. E. Shillinger reported for duty at the University of Minnesota on September 28 to begin cooperative work at the Medical School in studying contagious diseases of fur animals.

Dr. Karl B. Hanson early in the month was summoned to assist in combating an outbreak of disease among the animals on a fur farm at Stamford, N. Y., the first outbreak that has been called to the attention of the Bureau this season.

D. Monroe Green arrived at Fontana, Calif., on September 26 and reports that the construction work on the buildings at the Rabbit Experiment Station is proceeding rapidly and that the administration building will be ready for occupancy about November 1. Two large buildings that were on the property when the Bureau took over the station have been remodeled to serve as rabbit houses.

John W. Meyer, formerly with the Office of Exhibits, was transferred to the Biological Survey on October 1. He spent the month at the Fur-Animal Experiment Station, at Saratoga Springs, N. Y., studying various methods in conducting experiments in breeding, feeding, and handling rabbits. From Saratoga Springs he went to Fontana, Calif., where he will assist Mr. Green in the work at the Rabbit Experiment Station.

Miss Louise Alexander, junior stenographer, resigned on October 18.

FOOD HABITS RESEARCH

Examination has been completed of all English sparrow stomachs on hand, a total of more than 8,000. This brings to a close laboratory work that has been in progress intermittently for nearly 10 years and makes available for study a mass of material far greater than has ever before been used in determining the economic status of a single species of bird. It is more than three times greater than that used for the starling, which held the record up to this time. When it is realized that the starling material used as a basis for Department Bulletin 868 was greater than the combined material of all European investigators of this bird, including Collinge, Newstead, and Gilmour, an idea may be had of the relative scopes of the English sparrow examination and other studies of bird food habits. The indexing and tabulation of the items on the 8,000 stomach cards remains to be completed before the information can be had in a form available for publication. This is in itself a slow and tedious piece of work that will take months to complete.

GAME AND BIRD RESERVATIONS

Mr. Goldman visited the National Bison Range, Mont., Sully Hill Game Preserve, N. Dak., and Stump Lake and Chase Lake Bird Refuges, N. Dak., during the month.

Lisle Morrison spent two weeks during the month at the National Bison Range and with Mr. Goldman made a thorough investigation of all matters connected with the disposal of surplus animals there. Other questions relating to operations on the reservation were considered during the visit, including the location of new buildings, relocation of existing ones, and the maintenance of roads.

Under recent Executive order a group of marsh islands lying in the Matanzas River about 15 miles south of St. Augustine, Fla., were set aside as a bird refuge. The area is chiefly a nestling place for terns. Shearwaters nest in the vicinity and possibly occupy some portions of the refuge. These islands formed a part of the abandoned Fort Matanzas Military Reservation. The present order places them under the jurisdiction of the Department of Agriculture.

Bad weather during the hay harvest at the Elk Refuge, Wyo., this season delayed the stacking of the hay 30 days so that the harvest was not completed until September 22. Of the 836 tons of hay cut and stacked on the refuge about 200 tons were damaged to a certain extent from lying on the ground in rainstorms. The heavy rains, however, have been beneficial to the forage on the pasture lands.

The deed to the lands in Jackson Hole, Wyo., purchased by the Izaak Walton League of America and presented to the United States for enlarging the Elk Refuge, has been received by the Bureau and recorded, thus completing the transfer of the lands, since last year Congress formally accepted the gift. The presentation of these lands to the United States is a public-spirited act of far-reaching importance, and the officers of the League deserve the commendation of all those who have wild-life conservation at heart. The lands have been much needed for feeding grounds for the elk in winter. The area will be known as the Izaak Walton League Addition to the Winter Elk Refuge.

Chas. M. Conger, warden of Conconully Bird Refuge, Wash., reports that food for the birds at that refuge is plentiful. There were about 200 ducks on the refuge, mostly mallards and mergansers, on October 1.

A great deal of rain has been reported at Big Lake Refuge, Ark., the water reaching almost the height of the usual spring stage.

Fred M. Dille, warden of Niobrara Reservation, Nebr., has recently undergone an operation at a hospital at Omaha. Latest advices received indicate that he is doing well.

W. T. Cox, superintendent of the Upper Mississippi River Wild Life and Fish Refuge, and Rudolph Dieffenbach, land valuation engineer, of the Winona Office have been in Washington for conference on matters pertaining to land acquisition and administration of the Refuge.

Warden Wesley D. Parker, of Sullys Hill Game Preserve, reports that many red-heads have arrived at the preserve but no other northern ducks, and that there are not so many of these birds at Sullys Hill as were there last year. About five inches of snow fell there on October 8.

Five young Canada geese were shipped recently from Sullys Hill Preserve to the headquarters of the Upper Mississippi River Refuge at Winona, Minn. The geese, which are exceptionally large ones, are as tame as domestic birds, as they were raised with a domestic hen. They arrived at Winona in first-class condition and add materially to the flock of wild fowl maintained on Lake Winona.

For hunting within a closed area of the Upper Mississippi Refuge, one man was apprehended in September, plead guilty, and was fined \$50. For nonpayment of fine he is serving 30 days in the Winona County jail. Another person was taken before a justice of the peace and fined \$75 and costs for the possession of illegal fishing tackle.

During a recent trip in the West, Dr. H. C. Oberholser on August 28, visited Nine Pipe and Pablo Bird Refuges, Mont., in company with U. S. Game Warden Ransom. Water at both of these reservoirs was rather low, particularly at Pablo, in spite of which there was a satisfactory number of ducks, chiefly mallards. Food conditions were fairly good. On September 26 Doctor Oberholser visited Big Lake Bird Refuge, Ark., in company with Warden L. L. Bryan. At that time the water was low and muddy on account of dredging operations in progress north of the lake. Food conditions were not very good. The northern ducks had not yet arrived, and only a few local ones were seen, but among others the following birds were observed: 171 great blue herons, 212 American egrets, 60 double-crested cormorants, 45 white pelicans, and 250 wood ibises. This was unusually early for the appearance of the pelicans.

Miss Ethel N. Jett, of this division, is on vacation at Petersburg and Roanoke, Va., and is taking a motor tour through the western part of that State.

Miss Clara Ruth, of this division, recently returned from a vacation spent in Dayton, Ohio, and various points in Pennsylvania.

IMPORTATIONS

Among the rarer birds imported during the month were two queen wydahs (Diatropura progne), three half-moon wydahs (Coliostruthus ardens), and five blue-rumped parrakeets (Psittunus incertus), which were entered at New York in a large shipment from Hamburg, Germany, on October 4. These parrakeets, from the Malay Peninsula, were apparently the first of this species imported alive into the United States.

Owing to recent restrictions placed on the export of certain cage birds from Mexico, it is now necessary for importers of these birds to file with their applications for importation permits an authorization from the Mexican officials allowing the shipment of the birds out of that country.

MIGRATORY-BIRD TREATY AND LACEY ACTS

Mr. Sheldon spent about three weeks' vacation in October with friends and relative in Vermont.

Many responses are being received from wild-fowl hunting clubs all over the country to the Survey's request that they keep a record of the total kill by their members during the present open season and at the close thereof submit a report summarizing the numbers of birds, by species, killed by the club as a whole.

Warden B. R. Britton reports that in September at a back water at San Acacia, N. Mex., 9 gadwalls, 1 spoonbill, and 4 blue-winged teal were found dead, evidently having died either from alkali poisoning or from water poisoned by dead fish. Two semi-palmated sandpipers were found alive but unable to fly or walk straight, apparently paralyzed. The sandpipers were taken to Socorro and given a small quantity of castor oil and fresh water and fed on angle worms. Three days later one had fully recovered and was released, and the other was about ready to release. Fifteen dead sandpipers were found at the same hole. Warden Britton is of the opinion that the pool was poisoned by dead fish.

The survey is now receiving reports from State game authorities and U. S. game wardens on State prosecutions resulting from information contained in copies of invoices of raw-fur concerns, which have come in from the wardens and been referred to the State authorities. The bulk of this information was gathered in St. Louis, Chicago, and New York by wardens Barmeier, Roahen, and Farnham. Reports on 54 prosecutions in 6 States during July, August, and September were received. The heaviest penalties imposed were in Colorado and Wisconsin. In 5 cases in Colorado the fines and costs aggregated \$743.55, and in 14 cases in Wisconsin \$1,670.74 was collected. Individual fines in Colorado were as high as \$300 and \$255, and in Utah \$250. A shipper in Wisconsin paid \$300 in one case and \$100 in a second prosecution. Michigan collected \$436.80 in 17 cases, and Minnesota \$210 in 16 cases. A single case in Kentucky resulted in the imposition of a \$24 penalty.

Four migratory-bird treaty act cases were successfully terminated at the September term of Federal court at St. Louis, Mo. One offender charged with killing and possessing jacksnipe and yellowlegs during April paid a fine of \$50, while two other violators were fined \$50 each for killing wild ducks during March. The cases were obtained by Federal Warden Barmeier in conjunction with Federal Deputies Creech and Ferrier. Still another arraigned for hunting wild ducks from a motor boat was fined \$100, evidence in this case being submitted by Federal Deputy Riedinger.

In Federal court for the western district of Tennessee on September 30 three residents of Tiptonville, Tenn., charged with selling wild ducks entered pleas of guilty and paid fines of \$75 each. The evidence in these cases was obtained by Federal Deputy Blackwell.

Cases Terminated -- Reports Received During September

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeior, Creech*, Ferrier*	1	Missouri	Shooting at a grebe	\$25
"	2	"	Killing ducks in close season	\$100 each
Barneier, Ferrier*	1	"	Killing snipe and yellowlegs in close season	\$50
Lackwell*	3	Tennessee	Selling ducks	\$75 each
Charlton	1	Ohio	Selling and shipping migratory waterfowl without a Federal propagating permit	\$300 and costs of \$23
Riedinger*	1	Missouri	Killing ducks from a motor boat	\$100
Shaver	1	Wisconsin	Hunting ducks after sunset	\$25
Smith*	1	"	Hunting coots after sunset	\$25
Steele, Holmes	1	Iowa	Hunting ducks after sunset	\$10
Whitehead	1	Georgia	Possessing doves in storage in close season	\$10
Whitehead, Faircloth**	2	"	Hunting doves in close season	\$5 each

* U. S. Deputy Game Warden

** Deputy State Game Warden

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier	1	Missouri	Killing a brant in close season
Barmeier, Ferrier*	2	"	Hunting coot in close season
Farnham, Smith	1	New York	Possessing yellowlegs
Gieseler*	1	Illinois	Possessing a robin
"	1	"	Possessing a meadowlark
"	1	"	Possessing two killdeer
Holmes, Koster**	2	Nebraska	Possessing yellowlegs, sandpipers, and dowitchers
" "	2	"	Possessing yellowlegs
" "	2	"	Killing grebes
Jans*	1	Illinois	Possessing a jacksnipe, plover, and yellowleg in close season
"	1	"	Hunting jacksnipe in close season
Lewis*	1	Michigan	Killing ducks in close season
Roahen	4	Illinois	Possessing a wood duck
"	2	"	Hunting wood ducks
Scholler*	1	"	Hunting bitterns
"	1	"	Hunting terns
Steele, C.D.	3	Nebraska	Possessing yellowlegs
" " "	1	Kansas	Possessing a grebe
Whitehead	8	Georgia	Killing doves in close season

* U. S. Deputy Game Warden

** Deputy State Game Warden

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

Vol. 8

Washington, D. C., November 30, 1927

No. 11

GENERAL NOTES

Associate Chief Returns from Western Trip.--Mr. Henderson returned to Washington on November 25 after about a month spent in western States. On his way to the coast he stopped at Ogden, Utah, to confer with L. M. Winsor, irrigation engineer who made the survey of the Bear River Marshes under the Western Duck Fund. At San Francisco early in November Mr. Henderson attended the meetings of the Associated Sportsmen's Clubs of California and the California Wool Growers' Association. He also visited the Rabbit Experiment Station, at Fontana, Calif.; the predatory-animal and rodent control leaders in California, Arizona, New Mexico, and Texas; and United States Game Warden Clarkson at Houston, Tex.

Reflooding Lower Klamath Lake Impracticable.--It has long been the hope of conservationists that some arrangement might be made by which a program could be undertaken for reflooding Lower Klamath Lake, and a study was made this year by L. T. Jessup, an irrigation engineer assigned by the Bureau of Public Roads to the Biological Survey to determine its practicability. At a conference held in Klamath Falls, Oreg., on September 27 and 28, by Mr. Redington with representatives of the California and Oregon Game Commissions, the report of the engineer was rendered, and the many obstacles that preclude further consideration of the project were there brought out.

In the first place, the full supply of water from the Klamath River is needed for existing and projected irrigation plans and for power use. In the second place, legislation of the States of Oregon and California, which ceded the lands involved to the Federal Government for use as a reclamation project, stipulated that the water should be used for irrigation purposes. In the third place, even if water were available, it is held that the reflooding of Lower Klamath Lake would be detrimental to agriculture in the immediate region, and the cost of necessary project works, such as dikes and pumping plants, and the purchase of privately owned lands, would run into a very large figure.

At the conference held in Klamath Falls it was decided to drop consideration of the reflooding program in the Lower Klamath region and to concentrate the efforts of sportsmen and others interested throughout the country on the restoration work to be done on the Bear River Marshes, at the northern end of Great Salt Lake, Utah. Here it is possible by diking to establish large areas of fresh water, which when completed will not only furnish breeding and feeding grounds for a large number of waterfowl but will also operate to decrease the mortality that has been so serious among the birds for many years.

Resigns.--Miss Roberta M. Taylor, formerly photograph file clerk, who has been spending several months with her sister in Honolulu, Hawaii, has tendered her resignation, effective November 15.

A. O. U. Meeting Largely Attended.--The 45th Annual Meeting of the American Ornithologists' Union, which was held in the U. S. National Museum November 15 to 17, was attended by about 200 leading ornithologists of this country and Canada, with representatives also from England and Germany. All the officers of the Union were re-elected, including Dr. Alexander Wetmore, formerly of the Biological Survey and now assistant secretary of the Smithsonian Institution, president; and Dr. E. S. Palmer and T. E. Mcatee, secretary and treasurer, respectively. Dr. H. C. Oberholser was re-elected a member of the council. The two members of the Union who were elected fellows were E. R. Kalmbach and James E. Peters, the former now and the latter formerly connected with the Survey. Among the associate members who were elected to full membership was J. Stoddard Ligon, of the New Mexico State Game Commission, also a former member of the Biological Survey. The Brewster medal for the most meritorious work on American birds in the past six years was awarded to Dr. John C. Phillips, of Wenham, Mass., for his work on "The Ducks of the World."

Among papers given at the meeting by members or former members of the Bureau were: "History of Life Zone Work in America," by Dr. C. Hart Merriam, founder and chief of the Bureau from 1885 to 1910; "Drawing a Waterfowl Canvas," by Dr. H. C. Oberholser; "A Study of the Faunal Areas of the Southeastern United States," by A. E. Howell; "Ornithological Experiences in Haiti," by Dr. Alexander Wetmore; "Exhibition of a Hybrid Quail (*Callipepla* x *Lophortyx*) from New Mexico," by Vernon Bailey; "A Method of Determining the Annual Fluctuation in the Abundance of Waterfowl," by Frederick L. Lincoln; and "Data Concerning Past and Future," by Miss May T. Cooke.

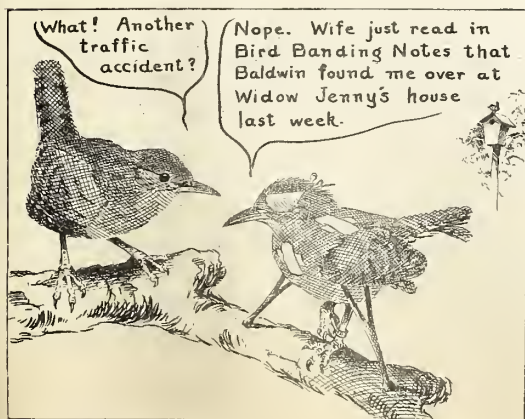
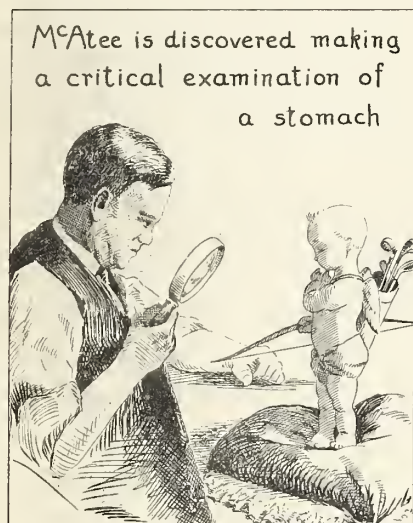
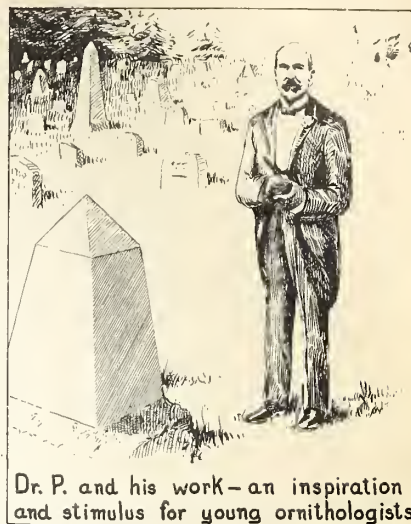
On November 16, members of the Union and their guests took a full-day excursion down the Potomac River as far as Tidewater on the steamer Charles Macalester to observe the waterfowl that winter in the region. A total of about 40 species of birds were noted during the day, including thousands of wild ducks, mostly black ducks and canvasbacks, many herring and lesser ring-bills, about 40 Canada geese, and a few great blue herons and bald eagles. A stop was made at Mount Vernon, Va., and while some of the ornithologists enjoyed the interior of this historic shrine, others examined the grounds for bird life.

At the annual dinner of the Union held at the Mayflower Hotel on the evening of November 16, a feature of the program was the showing of a series of cartoons projected from lantern slides from drawings by Dr. Kalmbach. Six of these, of especial interest to members of the Biological Survey, are reproduced on the opposite page.

Canadians Visit Bureau.--The following Canadian delegates attending the meeting of the A. O. U. met at the Bureau on November 15: Mrs. Hoyes Lloyd, Mrs. Harrison F. Lewis, Miss Pearl Robney, and Miss E. A. MacDonnell, and Miss Lulu Vahly. Hoyes Lloyd, supervisor of wild-life protection, Canadian National Park, also visited the Survey on November 16.

New Publications Issued.--The following publications of the Bureau have been received:

A FEW SIDELIGHTS ON MEMBERS OF THE BIOLOGICAL SURVEY
AT THE ANNUAL DINNER OF THE AMERICAN ORNITHOLOGISTS' UNION
FROM CARTOONS BY KALMBACH





- "Fur Laws for the Season 1927-28," Farmers' Bulletin No. 1552. By Frank G. Ashbrook, Frank L. Earnshaw, and Frank G. Grimes, 28 p. Received, October 31.
- "Game Laws for the Season 1927-28" (Revised), Farmers' Bulletin 1550. By Frank L. Earnshaw. 46 p. Received November 5.
- "Raising Domestic Rabbits" (Revised), Leaflet No. 4, By D. Monroe Green, 8 p. Received November 5.
- "The Magpie in Relation to Agriculture," Technical Pulletin 24. By E. R. Kalmbach. 30 p. Received November 11.
- "Mink Raising," Leaflet No. 8. By Frank G. Ashbrook. 8 p. Received November 16.
- "Report of Chief of Bureau of Biological Survey, 1927." 27 p. Issued November 26.

Manuscripts for Outside Publications have been submitted as follows:

- Day, Albert M. "Turning Pests into Profit."
- Gabrielson, Ira W. "Turning Pests into Profits."
- Gray, A. E. "What the Biological Survey Is Doing to Conserve Wild Life in New Mexico."
- Holman, George E. "Wild Animal Pests of the Range."
- Jewett, Stanley G. "The Flammulated Screech Owl in Oregon."
- Mallogg, Remington. "History of Whales--Their Adaptation to Life in the Sea."
- Malloch, J. R. "Notes on Oriental Sapromyzid Flies, with Particular Reference to the Philippine Species."
- Mills, Ernest M. "Control of Mice in Orchards."
- Oberholser, Harry C. "October and November Birds about Washington, D. C." and "The Migration of North American Birds: Red-headed and Lewis Woodpeckers."
- Stoddard, Herbert L. "Water Requirements of Pochwhite Quail," "The Rough-legged Hawk in Southern Georgia and the Goshawk in Florida," and "The Flamingo (*Phoenicopaterus ruber*) in Northwest Florida."
- Zimmerman, R. Scott. "Some of the Rodents of Utah."

BIOLOGICAL INVESTIGATIONS

Oberholser in the South.--Dr. H. C. Oberholser left Washington on November 19 for a trip of about a month to various wild-fowl grounds on the Atlantic coast in the interest of the waterfowl counts. His first destination was New Bern, N. C., from where he expects to work southward to take in other areas south to Florida.

Studying Rodents on Forest and Range.--Mr. W. P. Taylor during October worked on a variety of projects. Examinations and conferences relative to the effect of rodents on forestry and forage involved the Jornada Range Reserve, the Santa Rita Range Reserve, the Southwestern Forest Experiment Station near Flagstaff, Ariz., and the experimental plots near Coconino and Williams, Ariz.

Investigates Bat Colony.--Theo. H. Sheffer, stationed at Puyallup, Washington, has been investigating reports of colonies of bats that are said to have proved beneficial in controlling the codling moth in certain apple orchards in the State of Washington.

A. O. U. Visitors Consult Collections.--Among the visitors to the sessions of the American Ornithological Union, November 14 to 16, the following, interested in part or all, spent some time at the mammal rooms: R. H. Anderson, of the National Museum of Canada; A. L. Snyder, of the Royal Ontario Museum of Zoology; W. D. Clyde Todd, of the Carnegie Museum of Pittsburgh; Tracy I. Storer, of the University of California Farm; and Ernest Thompson Seton, of Greenwich, Conn. Among those who consulted the Survey's collection of birds in connection with their studies of various regions or groups were Mrs. Margaret E. Rice, of Columbus, Ohio; W. D. Clyde Todd, of Pittsburgh, Pa.; Miles D. Pirnie, of Ithaca, N. Y.; George Finlay Simmons, of Cleveland, Ohio; George M. Sutton, of Harrisburg, Pa.; F. H. Kennard, of Boston, Mass.; J. Van Dine, of Ann Arbor, Mich.; Doctor Hellmayr, of Chicago, Ill.; and A. J. Van Rossem, of Pasadena, Calif.

Examines Bird-Game Specimens.--John A. Holmwood, of Port Chester, N. Y., who has contributed many valuable specimens of bird-game animals to the Survey's collection, examined some of these specimens early in November in connection with a book that he is preparing on his hunting trips.

Visitors.--Audrey Borell, of the University of California, and Adolph H. Schultz, of Johns Hopkins University, visited the mammal rooms at the Museum on October 11; Dr. Frank F. Blanchard, of the University of Michigan, and Dr. C. C. Adams, of the New York State Museum, on October 18; and L. C. Baren, of the American Museum of Natural History, on October 29.

Seal Recovered from Colombia.--An interesting return from a banded blue-winged seal has been received from South America. This bird was banded April 14, 1927, at Kearney, Nebr., and was shot October 19, 1927, at Santa Marta, Colombia.

Attends Convention.--Frederick J. Lincoln attended the joint meeting of the Wilson Ornithological Club and the Inland Bird Banding Association held at Cleveland, Ohio, November 25 to 27. He gave an address on the returns from banded birds during the past three years.

ECONOMIC INVESTIGATIONS

Conference of Leaders Planned.--Copies of the program for a conference of leaders of predatory-animal and rodent control to be held some time next spring have been mailed to the respective leaders in the Western States. This conference will be the second of its kind since the control work of the Bureau was inaugurated in the West, and should accomplish much in standardizing the methods and procedure in the field. The exact date of the conference will probably be definitely settled by February 1.

More Funds in Texas and Arizona.--Cooperative funds to the extent of \$84,800 were available November 1 for predatory-animal work in Texas, according to C. R. Bardon, leader of predatory-animal control in that district. These funds came from the State Game and Fish Commission, commissioners' courts, and wolf clubs.

D. A. Gilchrist, leader of rodent control in the Arizona district, reports that he has succeeded in obtaining cooperative funds to the extent of \$23,700 from stockmen, the Navajo Indian Reservation, and county funds, for use in northern Arizona during the coming spring.

Mountain Lions Caught.--Luther J. Goldman, leader of predatory-animal control in the Idaho district, reports that Alfred Twitchell has trapped the first mountain lion taken in that district for some time. The animal measured 7 feet in length, and was caught in a No. 3 ^{leg. house} trap. Losses of sheep in southcentral Idaho are believed to have been caused by this lion.

M. E. Musgrave, leader of predatory-animal control in the Arizona district, reports that Hunter M. G. Gusman killed, on the Pinal Game Preserve, one of the largest mountain lions ever taken in the State. This old lion had ranged over a large area, and Gusman as well as other hunters had trailed it many times, only to lose it. The lion had evidently learned that dogs were not dangerous, and so gave little or no attention to them. This time, however, Hunter Gusman was with the dogs when the lion was jumped. The lion crawled out through the brush and walked leisurely along the hillside with the dogs scrapping at it from right and left. Gusman had only a pistol with him when he saw the lion walking along about a hundred yards distant, but he was fortunate in making a good shot, thus ending a career that has been very costly to livestock owners and the Federal and State Governments. While trailing this animal, Hunter Gusman ran across the remains of another mountain lion that had evidently been killed by poison put out the previous winter.

Rubber Suits Save \$301.--Mr. Gilchrist reports that during August it rained 10 days on the poisoned grain his men were using at Flagstaff, Ariz., and as a result 10 days' work was lost. To prevent such loss in the future Mr. Gilchrist purchased rubber suits and boots for his men to use on rainy days. When it was not possible to use poisoned grain on account of the rain, Mr. Gilchrist had his men use pumps to force gas down rodent burrows, and on rainy days the men put on rubber suits and worked with the poison gas in the areas of infestation that were being treated. It rained 15 days in September, requiring the use of gas and the rubber suits. The six men were paid \$360 for the 15 days' work. The rubber suits and boots cost \$59, so a net saving of \$301 was realized by the government.

New Rat Film Ready.--The new one-reel rat film entitled "How to Get Rid of Rats" has been completed and will soon be available for distribution. James Silver, leader of the Eastern Rodent-Control District, wrote the scenario and directed the production of the film. It is designed to stimulate interest in the control of the rat pest. Field workers anticipating immediate use of the film should make reservation for it before it is advertised generally.

Experiments with Mice Baits.--Odom Stewart, of the Eastern Rodent Control District, spent part of the past month conducting experiments in orchards near Washington, D. C., to compare the relative efficiency of thallium baits with standard strychnine baits in controlling pine mice.

Investigates Deer and Hare Damage.--Mr. Silver, of the Eastern Rodent Control District, has recently returned from New England, where in company with E. M. Mills, he investigated a number of cases of serious damage to young orchards by deer and European hares. Repellent washes to prevent hare injury, with linseed oil and petrolatum as a base, have had to be abandoned this year because of their slight injury to some of the young trees.

Porcupine-Control Work Progresses.--E. E. Horn, of the Eradication Methods Laboratory, reports progress in the porcupine-control problem near Flagstaff, northern Arizona. A check of results was made of the poisoning of dens on the slopes of the San Francisco Mountain since April of this year, and these were compared with results obtained from tree stations. Even where dens were numerous tree stations proved far more effective, and consequently will be used for further protection work in the Flagstaff region. Tree stations placed last April about several experimental forest plots gave complete protection to the plots throughout the summer and resulted in the death of 18 porcupines that had migrated across these small areas.

Catnip Baits Successful.--Charles J. Bayer, leader of predatory-animal control in the Wyoming district, reports good results in the art of bobcat trapping by hunters Bert Laird and James McClure. Hunter Laird has found out that in using catnip oil all the bobcats in his district hunt for his trap lines. In October two bobcats got into one setting of two traps, and a third one climbed the highest tree near trying to scent another trap set. Mr. Laird recorded all three cats. During September Hunter McClure landed three bobcats in a similar manner; a farmer beat him to the third, which had been standing guard over the other trapped animals. Last April Mr. Laird placed some sheep wool in a small bottle and poured in half a teaspoonful of catnip oil that had been diluted with oil of petrolatum. This bottle was securely fastened, and without adding any additional catnip oil Hunter Laird was still catching bobcats in October, six months later, and the catnip scent is still much in evidence.

Coyote-Magpie Exhibit on Train.--L. E. Daythe, of the Colorado district, and A. M. Day, of the Wyoming district, arranged a coyote-magpie demonstration booth for display on the Burlington Railroad Better-Poultry Special, a train consisting of ten demonstration cars showing methods of improving poultry products. In addition to the coyote, which is destructive of poultry, there was mounted a magpie on a small tree looking down into a turkey nest. A small "magpie stick" showed the proper method of preparing the stick and filling it with poison. The schedule of this demonstration train includes points through Colorado, Texas, New Mexico, Wyoming, Montana, and South Dakota.

Experiments with Coyote Poisoning.--F. E. Garlough, of the Eradication Methods Laboratory, spent considerable time during October in Parker County working with Hunter West and Assistant Leader Williams on an intensive experimental poisoning project, in which, some interesting results have been noted and 23 dead coyotes picked up at the experimental stations.

Bounty History Examined.--A. M. Day, leader of rodent control in the Wyoming district, has been doing some research work in studying the Wyoming bounty law on rodents. He finds that Wyoming's early pioneers were so badly troubled with ground squirrels that the 9th session of Wyoming's legislature passed a bounty law to encourage the destruction of these pests. The bill was introduced by John A. Mathews, of Dixon, Wyo., a pioneer on the Little Snake River in southern Carbon County, and, duly passed by the legislature, became effective March 3, 1886. It provided for a bounty of 25 cents each on badgers and 5 cents for each pocket-gopher, prairie-dog, and ground-squirrel scalp. These bounties were to be paid by each county and were supported by no State appropriation. A perusal of the old records of Carbon County, at Rawlins, showed that the county commissioners paid their first bounty on July 26, 1886. Between this date and August 27, 1887, one year and one month (and during this time the ground squirrels were out of hibernation only six months), they paid out the sum of \$5,000.25. Here the story ends, for the commissioners revolted and called a halt to the bounty before the county went bankrupt. Mr. Day finds that one enterprising individual was paid \$208.75 at one time. The bill was repealed at the next session of the legislature, in 1888, and has never been re-enacted, the first experience evidently having been too costly. Mr. Mathews was known for years afterwards as "Gopher Johnnie," and old residents of the Snake Valley still recount the story of his well-intentioned efforts to place a bounty bill on the statutes. Since that time several other States have discovered that the bounty system is too expensive and that it invites unscrupulous procedure on the part of some in collecting bounty fees, such as keeping stock for propagation and bringing in rodents from outside the State.

Reports Case of Rabies.--E. R. Sans, leader of predatory-animal control in the Nevada district, reports that a coyote head sent in from Strawberry Valley in White Pine County proved positive for rabies.

Renegade Wolves Trapped.--Reports from the Texas district are to the effect that Hunter W. D. Funderburk trapped a wolf early in October that was credited with having killed a total of 122 sheep on three ranches. One of the most notable catches made in Texas during October was that of Hunter R. H. Blaylock, who captured an outlaw wolf in Edwards County that had been depredating for more than four years on heavily stocked ranges there.

District Leaders Confer.--L. L. Laythe, leader of predatory-animal and rodent control in the Colorado district, early in October went to Albuquerque, N. Mex., to confer with Leader A. E. Gray, of the New Mexico district. During this conference he discussed with Mr. Gray the operations of the New Mexico rodent law and took up several other matters of mutual interest pertaining to predatory-animal work along the Colorado-New Mexico border.

Stock-Killing Grizzly Poisoned.--Hunter Charles A. Calar, of the Colorado district, recently poisoned a large grizzly, known as the "Red Mountain" bear, on the upper Rio Grande River near Creede. Owing to a six-inch snow falling at the time of the bear's death, Hunter Calar did not find it until too late to save the skin. This bear had killed several thousand dollars worth of livestock in this part of the Rio Grande National Forest.

FOOD HABITS RESEARCH

Sperry Back from the West.--C. C. Sperry has returned to Washington after a season's work in southern Oregon, where effort was made to diagnose the "duck sickness" that occurs periodically in that section. Experimental work was carried out with captive birds to determine whether alkali poisoning, which proved to be the causative agent at Great Salt Lake, also was responsible for the malady in the vicinity of Klamath Lake. There is reason to believe that factors other than alkali may enter into the problem, but it was not until the close of Mr. Sperry's work that experiments yielded some evidence that may lead to a full understanding of the malady. Additional field work in another season will be needed, however, before definite conclusions can be drawn.

Magpie Bulletin Issued.--"The Magpie in Relation to Agriculture," Technical Bulletin 24-T, by E. R. Kalmbach, was issued during the month, and copies may be had upon request to the Department. This bulletin discusses the economic status of the magpie, based upon an intensive study of its food habits and life history. A total of 569 stomachs of the black-billed and 23 of the yellow-billed magpie were used in the analysis of the bird's food. A chart and a table are given showing the proportions of the principal items in the food of the adult magpie. Methods of controlling the bird where it becomes a pest locally are described, including the preparation and placing of vegetable and suet baits and of carrion stations. The bulletin will be especially useful to ornithologists and to stockmen and farmers of the West who have the magpie to deal with.

Bird-Control Policies Outlined.--Copies of a memorandum for field men of the Biological Survey regarding practices and policies of the Bureau in matters of bird control have recently been distributed. Control policies as affecting the following birds are discussed, in addition to a paragraph on eradication of objectionable bird roosts: Crows, magpies, starlings, pinyon jays, English sparrows, turkey buzzards, hawks, and owls. The memorandum especially urges that copies of reports on all control work of this kind be filed with the Division of Food Habits Research in order that all information bearing on bird control may be centralized.

Talks on Whales.--Remington Kellogg lectured at the Carnegie Institution of Washington on the evening of November 29, on "The History of Whales--Their Adaptation to Life in the Sea." This was the third of a series of four evening lectures sponsored by that institution.

Wins Golf Tourney.--L. L. Buchanan has received a medal from the Secretary of Agriculture for winning the championship of the golf tournament of the Department. About 90 participants entered the tournament, six of whom were from the Biological Survey.

FUR RESOURCES

Building Progressing at Rabbit Station.--Mr. Henderson, on his recent visit to the Rabbit Experiment Station, at Fontana, Calif., found very satisfactory progress being made there. The administration building, he says, is a handsome structure and will be ready for occupancy in a few weeks. Two large buildings that were formerly used for poultry have been remodeled for rabbit-breeding buildings, and new structures similar to these are to be built later. A dog-proof fence of excellent design now incloses the entire farm. D. Monroe Green, director of the station, expects to have the work completed by the end of January when, according to tentative plans, dedication exercises will be held.

Spends Three Weeks in Middle West.--Mr. Ashbrook returned to Washington on November 7 from a three-weeks trip in the Middle West and to the Fur-Animal Experiment Station at Saratoga Springs, N. Y. He spent three days with Vernon Bailey at a beaver farm at Luther, Mich., assisting in the construction of a beaver corral to catch live animals. This farm was originally fenced for muskrat raising, but the venture was unsuccessful and at present the area is stocked with beavers. At Minneapolis, Minn., he conferred with Doctors Larsen, Green, and Shillinger concerning the cooperative work with contagious diseases of foxes, which is being carried forward with the hope that a serum may be developed to immunize foxes against the disease causing the losses. He also visited the office of the Minnesota Game and Fish Commission and a fur farm at Hackensack. He later visited fur farms at Mount Forest, Mich., where muskrats are being raised successfully in pens. He also inspected marsh areas operated at Port Rowan and Port Royal, Canada. These marshes border the northern shores of Lake Erie, and Mr. Ashbrook reports that they are the most densely populated with muskrats of any marshes he has visited.

Fox-Disease Studies Progressing.--Dr. J. E. Shillinger reports that the studies of epizootics among foxes, carried on by the University of Minnesota in cooperation with the Survey, are progressing steadily. The observations, photographs, and recorded pathological and bacteriological data are already voluminous. Dr. R. E. Green and his co-workers have autopsied more than 1,000 foxes.

Attend Fox Show.--Dr. Karl B. Hanson and Dr. J. E. Shillinger attended the fox show held by the American National Fox Breeders Association in Milwaukee, Wis., on November 14 and 15. They assisted in examining all the foxes entering the show for competition. A fair crowd was in attendance, but the number of foxes exhibited was less than in former years.

Arrives at Fontana.--John W. Meyer arrived in Fontana, Calif., on November 9, to assist Mr. Green in the work at the Rabbit Experiment Station.

New Appointments.--Miss Jozy Dell Hall was appointed stenographer-typist on November 16 to fill the position made vacant by the resignation of Miss Louise Alexander. Mrs. Nelle Sterling has been appointed stenographer at the Rabbit Experiment Station, at Fontana, Calif., effective November 1.

New Leaflets Issued.--"Mink Raising," by Frank G. Ashbrook, was issued during the month as Leaflet No. 8. This leaflet gives information on the subject of mink farming along the following lines: Description and habits of minks, selecting a ranch site, building pens and dens, breeding, mating, feeding, and killing and pelting. Bi-881, "Breeders of Utility Rabbits," is also available for distribution.

Addresses Civitan Club.--Mr. Ashbrook addressed the Civitan Club of Washington at its noonday luncheon on November 29 on the subject "Fur Farming." His talk was illustrated with colored lantern slides.

GAME AND BIRD RESERVATIONS

Visits Lake Malheur.--Mr. Goldman, accompanied by United States Game Warden E. C. Steele, recently visited Lake Malheur Bird Refuge, Oreg.

Addresses Woman's Club.--Ernest P. Walker gave a talk on Alaska before the Woman's Club at Takoma Park, Md., on November 1.

Elk Shipped to Alaska.--Six elk calves, transported from the State of Washington, were recently liberated on Krusof Island, Alaska, under the Territorial stocking program of the 1927 legislature, carried on by the Alaska Game Commission. A contract has been signed for delivery next spring of six mountain goats to be shipped to the State of Washington in return for the elk placed on Krusof Island and for additional elk for the Kodiak-Afognak stocking project.

University of Nebraska Gets Three Elk.--Three elk have been shipped from Wind Cave Game Preserve, S. Dak., to the Experiment Substation of the College of Agriculture of the University of Nebraska at North Platte. The elk arrived in fine condition, and an effort will be made to determine how these animals thrive under conditions at this substation. The animals will also be used for propagation and exhibit purposes. The inclosure in which they have been placed is said to be well sodded with native grasses. Near-by canyons will furnish them protection against the wind.

Young Buffalo Go to Italy.--Three two-year-old buffalo, a male and two females, were shipped from the National Bison Range, Mont., on November 2 to the Zoological Gardens at Rome, Italy--a gift from the Government. The animals were uncased at the New York Zoological Park, where they rested for a few days before starting on their ocean journey. All three are fine animals, weighing about 1,320 pounds each, cased. One of them is a bucket-raised calf that has been exhibited for the past two years at various Montana fairs.

Elk Remain in Mountains.--A report from Warden A. F. Nelson, of the Elk Refuge, Wyo., states that on the last day of October the elk were still far back in the high mountains. Some local hunters who had returned from the elk country reported that elk were scarce in the territory not restricted to hunting.

Few Hares at Sullys Hill.--Warden Wesley D. Parker, of Sullys Hill Game Preserve, N. Dak., reports that few varying hares are seen in the woods in that

locality; fewer, in fact, than were there last fall. This may be due to the cold wet spring that caused many of the hares to be lost. The northern ducks and geese have arrived at this preserve. The seven young antelope there are doing well and have been placed on a 60-acre area and are still being fed milk once a day.

Waterfowl Scarce at Conconully.--Waterfowl were reported scarce but Wilson snipe more numerous at Conconully Bird Refuge, Wash., late in October.

Gannets Plentiful in Georgia.--Warden J. F. Casey, stationed at Blackbeard Island Bird Refuge, Ga., reports that gannets were plentiful there in October and were seen on marshes, rivers, and creeks by the thousands. It was impossible to count them accurately, but Mr. Casey states that they would alight on trees and borders of marshes, completely changing the color of the landscape from green to white dotted with dark gray.

Swans at Lake Malheur.--On October 29, Warden George M. Benson, of Lake Malheur Bird Refuge, Oreg., saw the first swans that had arrived there from the north this season. About 300 were resting and feeding out on the Lake in the vicinity of Cole Island. Ducks and geese were also arriving in large numbers. Pelicans were still on the refuge early in November and also a few avocets and gulls.

Ducks and Geese at Dungeness Spit.--Warden Wm. E. Hubbard, of Dungeness Spit Bird Refuge, Wash., reports ducks arriving by the thousands in fine condition at the refuge early in the month. Geese are also plentiful there.

IMPORTATIONS

Siamese Geese Imported.--Several large shipments of birds and mammals were imported at New York during the month, and among the more interesting birds were two Siamese geese, which arrived from Holland on November 11. Permits were also issued for the entry of 7,600 Hungarian partridges.

Inspectors Attend A. O. U. Meeting.--The Bureau's inspectors of foreign birds at the ports of New York and Philadelphia, W. DeW. Miller, B. S. Bowdish, and Wm. L. Baily, attended the meeting of the American Ornithologists' Union during the week of November 14 to 19.

MIGRATORY-BIRD TREATY AND LACEY ACTS ENFORCEMENT

Find Quail Plentiful.--Mr. Sheldon and Talbott Denmead recently returned from a hunting trip in Dorchester County, Md., where they found quail much more plentiful than usual. In addition to a number of quail they succeeded in bagging several ring-necked pheasants, on which there is an open season in Maryland this year for the first time. While at Cambridge, Md., they had a conference with State Game Warden E. Lee LeCompte.

Examines Cheyenne Bottoms, Kans.--Mr. Denmead visited Kansas during the latter part of October to examine the Cheyenne Bottoms, now flooded by the heavy rains of last summer to the extent of 33,000 acres, and note its possible effect on the wild fowl supply of the country. In company with J. B. Doze, State fish and game warden of Kansas, and Seth E. Gordon, conservation director of the Izaak Walton League of America, he made a careful study of the entire situation and was impressed with the value of the area as a wild-fowl center. Mr. Denmead also visited Warden K. F. Roahen at Peoria, Ill., and conferred with him regarding a recent attempt to burn the Survey's motor boat Sora. It was evident that the perpetrators intended to destroy the boat and to injure or kill Mr. Roahen, but fortunately they were frustrated in their attempt.

Confers with Delaware Officials.--W. R. Dillon was in Wilmington and Dover, Del., on November 7 and 8, where he conferred with U. S. Game Warden T. T. Bloxson and J. P. LeFevre, chief game and fish warden of Delaware, relative to the administration of the migratory-bird treaty act.

Game Warden Ill.--Warden John Q. Holmes, of Omaha, Nebr., has been seriously ill with rheumatism for some time. His friends in the Survey wish him a speedy and complete recovery.

New Game Wardens Appointed.--R. T. Jones, of Henderson, N. C., was appointed U. S. game warden on October 25 for patrol work with the motor boat Canvasback on Back Bay, Va., during the hunting season. T. G. Forbes, of Bertha, N. C., was appointed on November 1 as U. S. game warden for patrol duty on Currituck Sound.

Duck Hunting Good in New Mexico.--Warden B. R. Britton writes that reports from all points up and down the Rio Grande Valley from Albuquerque to Las Cruces, N. Mex., indicate good shooting during the first week of the open season on waterfowl. He states that many of the hunters obtained 15 to 18 ducks before 9 a. m. and called it a day. Mallards, blue-winged and green-winged teals, spoonbills, pintails, and gadwalls were included in the bags. The ducks dressed out fat and were excellent eating, not having the strong flavor that the first ducks of the season usually have in that district. Because of the abundance of water this fall, the ducks appear to be in better condition.

Violators Fined \$100.--Federal Deputy Game Warden Creech apprehended three hunters for killing ducks from a motor boat on the Mississippi River at St. Louis, Mo., on November 6. When arraigned in Federal court at St. Louis on November 9, the accused pleaded guilty and paid fines of \$100 each. Such fines should serve as warnings to others who are prone to violate the migratory-bird treaty act by hunting from motor boats.

Cases Terminated--Reports Received During October

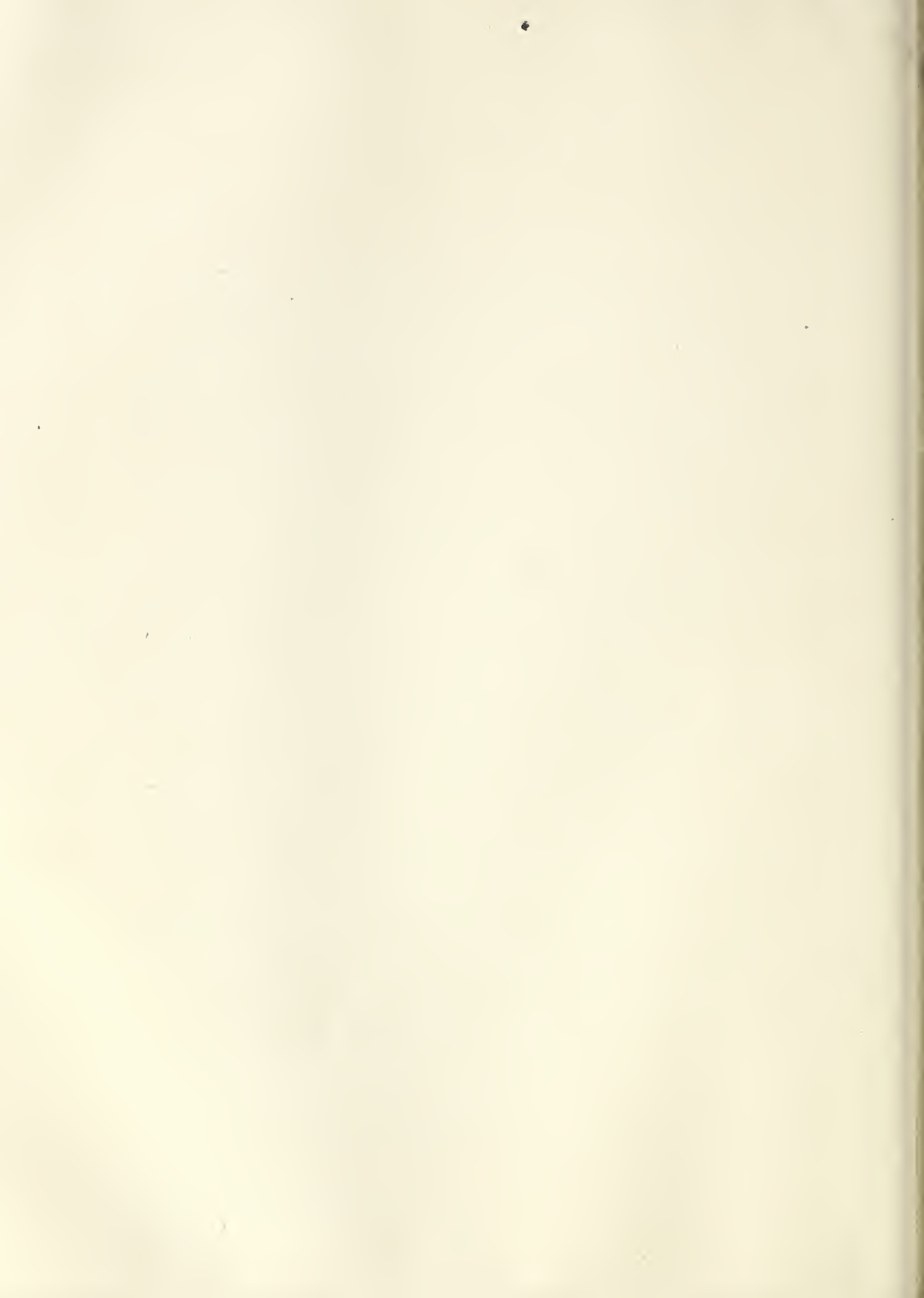
<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Ferrier*	1	Missouri	Killing a yellowleg	\$50
Birsch, Parker*	1	N. Carolina	Hunting geese after sunset	\$50
" "	4	" "	Hunting geese after sunset	\$15 each
Clarkson	1	Texas	Possessing a loon	\$50
Creech, Reidinger*	1	Missouri	Hunting ducks from a motor boat	\$10
Creech*, Ferrier*	2	"	Hunting ducks from a motor boat	\$50 each
" "	1	"	Hunting ducks from a motor boat	\$25
Farnham, Hilliard	2	New York	Hunting ducks after sunset	\$10 each
Lewis*	1	Michigan	Killing ducks in close season	\$1
Whitehead	1	Georgia	Hunting wood ducks	\$5
"	1	"	Killing wood ducks	\$5
"	1	"	Killing wood ducks	\$2.50
"	1	"	Hunting wood ducks	\$2.50

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Breaux**, Hunter**			
Holland*	1	Louisiana	Killing doves in close season
Charlton	1	Ohio	Possessing robins
Clarkson	1	Texas	Possessing doves in close season
Creighton	2	Maryland	Possessing flickers
Hilliard	4	New Jersey	Hunting ducks after sunset
Hilliard, Pierce*	3	" "	Hunting ducks after sunset
Peterson*	2	Illinois	Killing grebes
Peterson*, Scholler*	1	"	Possessing insectivorous birds
Scholler*	3	"	Killing coots from a motor boat
"	5	"	Killing insectivorous birds
"	1	"	Shooting at swallows
Schreiber**, Wendel**,			
Holland*	2	Louisiana	Possessing doves in close season
Smith, Callahan**	1	New Hampshire	Possessing a yellowleg
Steele	1	Kansas	Killing sandpipers
"	1	"	Hunting ducks after sunset
Tonkin	2	Nevada	Possessing doves in close season
Whitehead	10	Georgia	Hunting and killing doves in close season
Whitehead, Sears**	3	"	Killing doves in close season

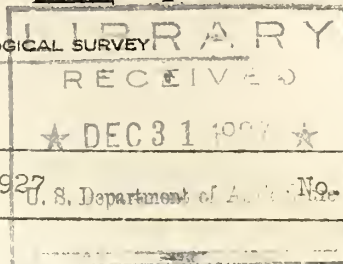
* U. S. Deputy Game Warden

** Deputy State Game Warden



THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



Vol. 8

Washington, D. C., December 23, 1927

U. S. Department of Agriculture No.

12

MEMBERS OF THE SURVEY:

At the end of another year it gives me pleasure indeed to extend to the members of the Survey, in Washington and in the field, cordial good wishes for the holiday season and for a successful and prosperous new year.

The new work that has come to me during the past year is of an exceedingly interesting character. It involves problems many of them difficult of solution and all of real import to the welfare of the Biological Survey and its members. In my travels throughout the country I find that the work of the Survey is well appreciated by those agencies, scientific and economic, that are in close touch with what the Bureau is doing. This is, of course, very gratifying, and it is largely due to the fact that the men of the Survey are making an impress for conscientious and painstaking attention to their jobs.

The future looks bright, I think, in many directions because of the growing interest throughout the country in our economic and wild-life conservation programs. More and more demands are being made on us, and it is exceedingly difficult to meet these demands with our rather meager resources. Within the next few months we should learn definitely whether we are going to obtain additional financial support for our undertakings. I hope this will come about. In the meantime I want to tell you that this is not a one-man job. No human mind can, in the first place, comprehend or, in the second place, figure out the solution of all the problems involved in the work of the Biological Survey. Two minds are always better than one, and I genuinely appreciate the cooperation I have received from the members of the Survey, both in the Washington office and in the field, in the constructive suggestions that have been made and the moral support given.

I want to impress upon each one of you that while you are more or less specialists in a given field you must have ideas regarding the conduct of other phases of the Bureau's work, and no one need consider that he is guilty of an impertinence in forwarding these ideas through the proper channels. They will be of great help. I want frankly to have all members of the Survey consider that their responsibility in running the affairs of the Bureau is a big one and that they should apply themselves insofar as their capacities permit to the fulfillment of that responsibility.

Paul G. Redington
Chief.

GENERAL NOTES

Survey Men Attend Game Conference.--A number of members of the Biological Survey appeared on the program of the 14th National Game Conference held in New York City on December 5 and 6 under the auspices of the American Game Protective Association. Mr. Redington made an address on "Some American Game Problems," discussing the field of relations between the sportsmen and game protectors and the governmental agency concerned in the regulation of wild life, and outlining some of the major lines of work that the Bureau is conducting. Mr. Goldman spoke on the "Fluctuation of Game in Numbers" and presented several factors causing these periodic increases and decreases in wild-life population. Talbott Denmead in a paper on "Restocking Versus Protection" stated his belief that in view of the many failures of restocking attempts in the past, protection should be the keynote of conservation programs. Doctor Fisher presented the report of the Committee on Species Destruction of Game, and Herbert L. Stoddard told of the progress made during the year of the Cooperative Quail Investigation in southern Georgia and northern Florida.

The National Game Conference is one of the largest and most important of its kind held each year and is attended by many men of national note and by representative conservationists and sportsmen from all over North America. W. C. Henderson, H. P. Sheldon, W. R. Dillon, Dr. W. B. Bell, F. G. Ashbrook, and Stanley P. Young were also in attendance at the conference and had opportunity to meet many of the men who are cooperating with the Survey in its activities.

Increased Appropriation Recommended for 1929.--In the budget for 1929, which is now in the hands of Congress, an appropriation of \$1,078,500 has been recommended for the use of the Survey for the fiscal year 1929, which is a net increase of \$43,480 over the appropriation for 1928. The actual increase for regular items, however, is \$61,480, since the 1928 appropriation contained a special item of \$18,000 for fence construction on Wind Cave National Game Preserve, S. Dak., which is not continued for 1929. The increase of \$61,480 is for the following purposes: General administration, \$1,480; game and bird reservations, \$15,000; economic investigations, \$22,000; biological investigations, \$8,000; protection of migratory birds, \$5,000; and administration of the Upper Mississippi River Wild Life and Fish Refuge, \$10,000.

Bills have been introduced in the Senate and House similar to bills pending in the last Congress "to more effectively meet the obligations of the United States under the migratory bird treaty with Great Britain by lessening the dangers threatening game birds from drainage and other causes, by the acquisition of areas of land and of water to furnish in perpetuity reservations for the adequate protection of such birds; and by providing funds for the establishment of such areas, their maintenance and improvement, and for other purposes." It will be known as the "Migratory-Bird Conservation Act."

Bills pending in the last Congress but failing of enactment because of legislation tied up in the closing hours of the session have been again introduced "authorizing the establishment of a migratory bird refuge at Bear River Bay, Great Salt Lake, Utah." An appropriation of \$350,000 for this item is provided for in the bill.

Chief Speaks at Biological Society.--At the meeting of the Biological Society of Washington held at the Cosmos Club on the evening of December 17, Mr. Redington gave an informal discussion of "Some Biological Problems."

Magazine Gives Complimentary Subscriptions.--Through the courtesy of the National Sportsman Magazine a number of wardens and other field men of the Bureau are to receive during 1928 complimentary subscriptions to that periodical. This generous action is in line with a game restoration program to which the National Sportsman is devoting liberal space each month, the educational publicity of which should be instrumental in developing closer cooperation among sportsmen in the protection, care, and propagation of game.

Visits Survey.--Prof. Alvin G. Whitney, a former employee of the Biological Survey, visited offices of the Bureau on December 3, renewing acquaintances and obtaining information and publications of value in connection with the course in forest ecology that he is giving at the University of Michigan.

Manuscripts for Outside Publication have been submitted as follows:

Ashbrook, Frank G. "New Developments in Fox Farming."
Howell, A. H., and [A. J. Van Rossem]. "A Study of the Red-winged Blackbirds of Southeastern United States."
McAtee, W. L. "A Two-word Code of Nomenclature."
Moore, A. W. "Zapus princeps princeps in Utah."
Preble, Edward A. "The Flower-pot Bird House" and "A Child's First Nature Talk."
Steph, O. E. "Montana Jack Rabbits Are Worth Money."

BIOLOGICAL INVESTIGATIONS

Oberholser Still in South.--Dr. H. C. Oberholser reports continued success in organizing the work of the monthly censuses of wild fowl in the southeastern coast region. Especially important areas visited include Pamlico and Currituck Sounds, N. C., although a severe storm cut short his observations at the latter place. His itinerary during the second and third weeks of December included Savannah and Thomasville, Ga., Daytona Beach and Jacksonville, Fla., and Bertha, N. C.

Take Waterfowl Census on Potomac River.--Dr. H. H. T. Jackson and A. H. Howell made a trip on the State of Maryland's boat Canvasback down the Potomac River from Washington to Occoquan Bay, Va., on December 10, to make observations on waterfowl. Although a strong wind came up from the south, which made conditions unfavorable for the work, they report seeing about 110,000 ducks, about 70,000 of which were canvasbacks. Next in order of abundance were lesser scaups, black ducks, greater scaups, gadwalls, and American mergansers. Eighteen species of ducks were noted, besides Canada geese and coots.

Confer on Aleutian Islands Survey.--On December 14, Dr. Wm. Crocker, chairman of the division of biology and agriculture, Doctor Lindgren, chairman of the division of geology and geography, and Dr. Albert L. Barrows, assistant secretary, all of the National Research Council, visited the Bureau to confer with the Chief and other members of the Survey staff in the interest of arranging comprehensive cooperative studies of geological, zoological, and botanical problems, and other related lines of research, in the Aleutian Islands. Effort is being made to enlist in this survey such agencies as the Biological Survey, the Bureau of Plant Industry, the Forest Service, the Geological Survey, the Coast and Geodetic Survey, the Bureau of Fisheries, and the Smithsonian Institution. The Biological Survey is interested in the undertaking both because of its scientific value and because of the aid that would accrue in the administration of the Aleutian Islands Bird Reservation, important as a bird sanctuary and for the production of fur-bearing animals. The representatives of the National Research Council evinced much interest in the work that is now being done by the Biological Survey in connection with investigation of grazing conditions and possibilities for reindeer production in Alaska, and that for the conservation of game in cooperation with the Alaska Game Commission, and were hopeful that this work could be articulated to advantage with the projected program.

Doctor Nelson Back from California.--Dr. E. W. Nelson returned on December 12 from southern California, where he has been enjoying a well-earned period of rest and has availed himself of the opportunity to study specimens in the museums at Berkeley and Los Angeles, Calif., and to confer with scientists interested in biological problems of Lower California and Mexico.

Plant and Animal Ecology Discussed.--On December 10, Dr. F. E. Clements, ecologist of the Carnegie Institution of Washington, visited the Bureau to discuss plans for developing and carrying forward research upon grazing and forestry problems now being conducted in the Southwestern States in cooperation with the Forest Service and the Biological Survey. Doctor Clements has for several years cooperated with the Bureau in research work in plant and animal ecology, and he expressed much interest in the outlines covering projected plans for the research activities of the Bureau with a view to obtaining information that is needed as a basis for the effective development of the Bureau's program for the administration of wild-animal life, including the conservation of useful species and the control of those that are harmful.

Taylor Attends Conferences.--Dr. W. P. Taylor during the month participated in a number of conferences looking to a better organization in the study of the relation of wild life to forestry, grazing, and agriculture in the Southwest. Some of these were in connection with a meeting of the executive committee and chairman of sections of the southwestern division of the American Association for the Advancement of Science. Other conferences were held with officials of the University of Arizona and the Jornada Range Reserve and with a number of representatives of the Forest Service. On November 22, he lectured at the University of Arizona on the relation between animals and forest and forage management. During the last days of November

and the first few days of December, in cooperation with officials of the Forest Service, he inspected the Tonto Bio-ecological Project near Roosevelt, Ariz. He also conferred with A. L. Alexander, of the Forest Service, in charge of the Roosevelt Bird Refuge, concerning the advisability of returning Roosevelt Lake to its original totally protected status, as suggested by several officers of the Gila County Game Protective Association.

Elk in Jackson Hole in Good Condition.--O. J. Murie spent November mainly in the vicinity of Jackson, Wyo. He found the first definite movements of elk during the first week of the month, and by November 21, probably two thousand were present on the Elk Refuge. A considerable number were taken in the hunting areas between the refuge and the summer range by visiting sportsmen and also by local residents who are accustomed to provide a part of their meat for the winter in this manner. The carcass of one elk taken for the purpose was examined carefully for external and internal parasites, and others were saved as scientific specimens. Mr. Murie reports the elk in good condition.

Continues Bulb-Pest Investigation.--Theo. H. Scheffer, stationed at Puyallup, Wash., has spent considerable time following up the work on various areas that he has been keeping under observation, where small burrowing rodents threaten the growing bulb-raising industry. Investigation of the food habits of harbor seals also held his attention for a part of the time during October and November.

Donates Specimens of Pine Mice.--F. J. Schmidt, of Stanley, Wis., through his interest in Doctor Jackson's studies of the mammals of that State, has recently donated several specimens of mammals to the Biological Survey collection. Of especial value among these are 11 specimens of pine mice, the only ones in our collection from that State. Until Mr. Schmidt took the pine mouse in Wisconsin in 1925, the species was unknown there.

Visits Museum.--William P. Ranch, of New York City, a big-game hunter interested and cooperating in the work of the Bureau, visited the museum office on December 1 and 2.

Attend American Nature Association Banquet.--Vernon Dailey and E. A. Preble, as members of the Scientific Consulting Board of the Nature Magazine, were guests at a banquet at the Racquet Club on December 13. Following the banquet several hundred of the guests, including representatives of most of the scientific and educational agencies of Washington, had an opportunity to inspect the new quarters of the association. A special feature was an extensive series of cartoons, illustrating forest conservation, sent in from all over the country in competition for prizes offered by the American Tree Association. Several reels of motion pictures of mountain goats, mountain sheep, hoary marmots, white-tailed ptarmigan, and other interesting species, taken on the association's expedition to Glacier National Park during the past summer, also were shown.

Lectures at Eastern High School.--Frederick C. Lincoln on December 16 gave a talk before the Science Club of Washington Eastern High School on the subject "Bird Migration."

"Uncle Sam, De-bunker".--An editorial in the New York Times for December 15 says: "'Uncle Sam, de-bunker,' is the latest title which the Department of Agriculture has earned for the Government. That versatile bureau, which has done so much to lead us in the manner in which we should go, has just issued a pronouncement to the effect that porcupine does not 'shoot' its quills. This is at odds with tradition running back into the Dark Ages. It violates one of the sacred canons of American country boyhood. Only the city-bred whose knowledge of the 'fretful porcupine' rests on books are sufficiently sophisticated to realize that Uncle Sam is right. They know that the porcupine occasionally manages to shake loose a few quills, and that dogs, when they attack and try to bite him, come away with a mouthful of quills. But in the country these matters are better understood. Traditions are not to be upset by Government pronunciamento. From time immemorial the ukase has gone forth from elder to younger brother--'Keep clear of the porcupine's range!' If Uncle Sam continues his investigations into superstitions about animals, he will soon be telling us that a guinea pig's eyes will not drop out if it is picked up by its tail."

FOOD HABITS RESEARCH

Inspects Back Bay and Currituck Sound.--On November 19 to 23, Mr. McAtee made an inspection of Back Bay, Va., and Currituck Sound, N. C., to learn the condition of wild-duck foods there. Back Bay, he reports, is practically fresh this season, and Currituck Sound is not so salt as it was at the last inspection two years ago. The supply of wild-duck food is better than it has been in recent years, but consists almost entirely of a single species, sago pondweed, which has considerable resistance to salt. It is thought that improved conditions this year are due mainly to heavy rainfall during the growing season, and that without this aid the duck foods might deteriorate another season. In fact, they are menaced so long as there is a flow of salt water into Currituck Sound from the Albemarle and Chesapeake Canal.

Visit Virginia Game Farm.--On November 30 Mr. McAtee accompanied W. A. King, of Brownsville, Tex., to the Virginia State Game Farm and learned of recent advances in quail culture. The farm has distributed more than 5,000 young birds this year, a number that would indicate that the process probably can be expanded as much as is considered desirable. The highest number of eggs obtained from one bird in a single season is 128, and there are included in the breeding stock of the farm nine females that in the fourth year of their captivity have averaged more than 90 eggs each. Herbert L. Stoddard, in charge of the field work of the Cooperative Quail Investigation, also stopped at the Virginia State Game Farm en route to the meeting of the American Game Protective Association in New York, and on the return trip spent a few days in Washington conferring with collaborators in the Biological Survey and other bureaus.

FUR RESOURCES

Calls at Offices of Fur Magazines.--Mr. Ashbrook, on his recent trip to New York City, visited the offices of the Black Fox Magazine and the Fur Trade Review and of the National Association of the Fur Industry. The two magazines mentioned, along with many other fur journals, are giving considerable space to the work that the Survey is doing. The Fur Journal, the official organ of the National Association of Fur Industry, is publishing a series of articles on fur-bearing animals of the United States to interest the members of the fur trade in the characteristics, distribution, and habits of wild fur bearers, as well as the protection afforded these animals in the various States.

Fox Pelts of Good Quality.--Pelting season is on at the U. S. Fur-Animal Experiment Station, Saratoga Springs, N. Y. Dr. K. B. Hanson reports that the pelts taken this year are far superior in quality to those taken last season. Proper selection and mating of the foxes are mainly responsible for the improvement, with kind of feed and methods of feeding as contributing factors.

Former Member Visits Bureau.--Dr. Ned Dearborn, of Sackets Harbor, N. Y., formerly in charge of the fur resources work of Biological Survey, visited offices of the Bureau on December 15 to renew acquaintances and discuss developments in fur farming. Doctor and Mrs. Dearborn were on their way to Florida, where they will spend the winter.

Fur-Farm Stock to Europe.--When the Hamburg-American liner Cleveland sailed out of New York harbor on December 5, 1927, one of the largest consignments of fur-bearing animals went with her. Destined for fur farms in Austria, Czechoslovakia, Finland, Holland, Lithuania, Poland, Belgium, and Switzerland, the live cargo consisted of 1,200 minks, 150 silver foxes, 12 raccoons, and 42 muskrats. The animals are valued at \$150,000. The shipment represents a new development in the American fur industry, which through the near-exhaustion of many wild fur-bearers has come to rely on the breeding of these animals in captivity.

Aviation Furs Inspected.--In a cooperative undertaking of the Survey with the War and Navy Departments, Mr. Ashbrook has been called on to inspect furs submitted with contracts for the manufacture of aviators' garments. Information concerning the quality of the fur samples submitted was given army and navy officials to assist them in awarding the contracts.

ECONOMIC INVESTIGATIONS

Rodent Headquarters Established at Raleigh.--James Silver and Odom Stewart left Washington on December 14 for Raleigh, N. C., where Mr. Stewart is to make his future headquarters at the North Carolina State College of Agriculture and Engineering, while having charge of the rodent-control work of the Bureau in the Southeast.

Rodent-Control Methods Exhibited at Stock Show.--I. N. Gabrielson, leader of rodent control in the Oregon district, reports that among the activities of the month of November was an exhibit of rodent-control material at the Pacific International Livestock Show. This display consisted of plaster-of-Paris models of mole and pocket-gopher runways, specimens of the rodents that occur in Oregon, live moles, a flying squirrel, pocket gophers, and the motion-picture film "The Modern Pied Piper." There was always a crowd around the booth watching the pocket gophers build mounds and the activities of the moles. The picture "The Modern Pied Piper" was put on as a miniature by using a portable projector close to a small screen, and was shown several times a day during the eight days of the show, with an audience of forty or fifty at each performance.

Ground-Squirrel Bounties Vs. Control in South Dakota.--Louis Knowles, leader of rodent and predatory-animal control in the South Dakota district, reports that ground-squirrel work is under way in Campbell, Walworth, Clark, and Codington Counties, comprising two widely separated districts in the State. The control of this pest has been provided for under the South Dakota law and is generally undertaken by counties by the time-honored and always ineffective and costly bounty system. The counties above named have through the efforts of their county agents discontinued the payment of rodent bounties and have taken up the methods of control advocated by the Biological Survey. The experience of Codington County affords a fair example of the difference in the cost and effectiveness of the bounty system and Biological Survey methods. During the fiscal year 1924 Codington County operating under the bounty system paid out a little more than \$11,000 in its effort to eradicate ground squirrels. It had been expending similar sums for bounty purposes for several years and was experiencing a steady and increasing demand for larger appropriations for the purpose. The ground squirrels were increasing in numbers, resulting in a constant annual increase in damage to crops. In 1927, adopting the methods advocated by the Biological Survey, Codington County supplied poisoned grain free to the farmers and landowners at a cost of \$104.09. Ground squirrels were reported well under control and the losses due to their depredations were the smallest that have been experienced in that county since this pest became a factor to be reckoned with in crop production.

Rabies Recurring in Nebraska.--Mr. Knowles also reports that the outbreak of rabies among dogs that apparently originated in southeastern Wyoming more than a year ago has gradually worked east through western Nebraska and has recently been reported in the vicinity of Valentine and Crookston, Nebr., only a few miles south of the South Dakota Rosebud Indian Reservation. Should this report of rabies among dogs prove to be true, it will undoubtedly make its appearance among Indian dogs of the Rosebud Reservation, for it is the custom of many of the Indians of this reservation to camp for several days at a time at the edges of both of the Nebraska towns mentioned. These Indian camps usually have a large dog population, and when the Indians return to their reservation, they generally take with them a few additional dogs that have been picked up or traded for.

Cherry Trees Destroyed by Pocket Gophers.--R. S. Zimmerman, leader of rodent control in the Utah district, reports that while inspecting orchards at North Ogden, in Weber County, Utah, he learned that about 400 three-year old cherry trees had been destroyed by pocket gophers. The foreman of the orchard stated that these trees were worth \$15 each to the orchard company. The agricultural inspector for Weber County has been using vegetable bait together with calcium-cyanide gas as a check on the best method of control. It is reported that the cyanide dust when blown into the holes by means of a pressure pump is about 75 per cent effective, while the vegetable bait gives about the same results.

Mouse Infestation Serious in Washington.--Leo K. Couch, leader of rodent control in the Washington district, reports that orchard mice have seriously affected the irrigated districts of Okanogan, Chelan, and Yakima Counties. Under the direct supervision of Biological Survey officials 20,000 pounds of steam-rolled oat baits were prepared and distributed at cost in these three counties. Yakima County took 16,000 pounds, which in addition to 9,000 pounds previously mixed, made a total of 25,000 pounds for the fall season in this county, exceeding by 3,000 pounds the quantity distributed in the serious mouse year of 1922-23. The total of poisoned grain distributed in the State so far this fall for mice is 39,000 pounds. Experience of former years assisted materially in putting over the campaign, growers taking without hesitation the quantity of grain necessary to cover their holdings. The recommended fall poisoning of mouse runs under cover crops gives greater efficiency than bait protected in cans, boxes, and artificial shelters. One mouse-poisoning demonstration was given at Cmak, Wash. Heavy mouse infestation has been reported locally in Benton, Walla Walla, and Stevens Counties.

Survey Exhibit Shown at Arizona State Fair.--D. A. Gilchrist, leader of rodent control in the Arizona district, reports that the Biological Survey exhibit at the Arizona State Fair consisted of prairie-dog and predatory animal sets from Washington with the following live animals added by the Arizona office: "Agnes Colgate," a pet skunk; "Oswald," a pet pocket gopher; "Caesaria," a pet porcupine taken with a Caesarean operation; "Volstead," a pet prairie dog that has been in the possession of the Arizona office for two years without water and weighs half a pound more now than when captured; a banner-tailed kangaroo rat; a golden-mantled ground squirrel; a Yuma round-tailed squirrel; a cotton rat; a western chipmunk; an Abert tassel-eared squirrel; a pet mountain lion; a bobcat; and a coyote. Mounted specimens of albino prairie dogs and the Arizona weasel were also displayed. Special gas guns, pocket-gopher guns and traps, and the new tools used to place pocket-gopher poison in place of the old prod method, with proper placards describing each, also formed part of the exhibit.

To Work for Citrus Growers.--Specialist Preston Mercer, of the Phoenix district, has been loaned to the Arizona Citrus Growers' Company for a period of six months to supervise the clearing of the pocket gophers from the groves of the members. The association is paying his salary for the period.

Cougars Taken in Oregon.--Hunter Elmer Miller, of Curry County, Oreg., and Harry Stokes, of Josephine County, in addition to establishing and baiting poison stations for coyotes, spent considerable time during the month with their dogs hunting cougars in the higher country. Mr. Miller was successful in landing four of these cats, while Mr. Stokes came in with two. All six were taken in what is known as one of the best deer sections of the State. The cleaning up of these animals in that section will mean a great deal toward the perpetuation of a good supply of deer.

Pocket-Gopher Film Nearly Finished.--E. J. Kelly and C. Cramer, of the Extension Service of the United States Department of Agriculture, visited the Kansas district on November 20 and 21 to take the remaining pictures needed for the pocket-gopher film, "Million Dollar Pockets," which will probably be released shortly after the beginning of the new year.

Experiments in Pocket-Gopher Poisoning.--E. E. Horn, assistant biologist from the Biological Survey Research Laboratory at Denver, spent the latter part of November in Kansas district engaged in experimental work in poisoning pocket gophers.

Congratulations!--A son, B. E. Foster, Jr., was born December 1, 1927, to Mr. and Mrs. B. E. Foster, of Tucson, Ariz. Mr. Foster is junior biologist in the Arizona rodent-control district. Also, to Mr. and Mrs. Albert M. Day, of Laramie, Wyoming, a daughter, Doris Jeanne, born December 12, 1927. Mr. Day is the leader of rodent control in the Wyoming district.

GAME AND BIRD RESERVATIONS

Returns from Western Trip.--Mr. Goldman returned on December 1 from an extended inspection trip to various game and bird reservations as far west as California. While in San Francisco he attended the annual meeting of the Associated Sportsmen's Clubs of California. On December 8, he lectured on "Federal Game and Bird Refuges" at the Brooklyn Academy of Arts and Science, New York City.

Elk Arrive at Refuge.--The first elk to appear at the Winter Elk Refuge, Wyo., this fall was a lone bull that came onto the Germain tract within the refuge on November 6. A week later 10 cows and calves arrived, and on November 20, 113 elk were counted on the same tract. Since that time the elk have been coming to the refuge in large numbers, and on November 30 approximately 2,500 were on the area.

Big Game Transferred.--Three buffalo and three elk have been transferred from Sullys Hill Game Preserve, N. Dak., to the Turtle Mountain State Game Preserve, N. Dak., for stocking purposes. Few grouse and prairie chickens have been seen at Sullys Hill this winter.

Birds Numerous at North Platte.--The number of wild geese at North Platte Bird Reservation, Nebr., during the fall has varied from 2,000 to 3,000 at different times and the number of ducks from 13,000 to about 20,000.

Warden Hoyt Stationed at Niobrara.--H. H. Hoyt, assistant warden of the National Bison Range, Mont., is now stationed at Niobrara Reservation, Nebr., in the absence of Warden Fred M. Dille, who is taking several months leave.

Patrolmen Appointed.--L. J. Barthell, E. H. May, John Sauers, Robert Smith, John Steiver, George White, and Herman Haas have been appointed patrolmen on the Upper Mississippi River Wild Life and Fish Refuge.

IMPORTATIONS

Rare Birds Brought In.--Among the rarer birds brought in during the month were four emperor starlings from Africa imported via Hamburg and five Forster lories via Singapore. Several large shipments of birds for the Christmas trade have been arriving at New York, and a total of about 14,000 birds of various species were entered during December 9 to 13.

Takes Over Inspection Work at New York.--B. S. Bowdish, of Demarest, N. J., took over the work of inspection of foreign birds and mammals at the port of New York on December 1, relieving W. Delitt Miller, who has been on duty at that port since July 1.

Not So Many Foxes Imported.--There has been a decrease in the number of foxes imported from Canada thus far this season over that of the past two or three years; permits have been issued for a total of only 2,268.

MIGRATORY-BIRD TREATY AND LACEY ACTS ADMINISTRATION

Advisory Board Meets.--The annual meeting of the Advisory Board, Migratory-Bird Treaty Act, was held at the Cosmos Club, Washington, D. C., on December 8 and 9, with 14 of the 22 members in attendance.

Attends Fish and Game Conference.--Mr. Sheldon attended the Sixty-third Annual Conference of the New York State Fish, Game, and Forest League held in Syracuse on December 1 and 2. Interesting papers were presented particularly with regard to game, fish, and forest conservation in New York State. On the evening of December 1 Mr. Sheldon attended the banquet held at Hotel Syracuse and made a short talk on the purpose of the waterfowl census and on game-law enforcement. Among the many sportsmen and officials whom he met at the conference was George A. Lawyer, former chief U. S. game warden. Despite the fact that heavy rains had flooded that portion of the State, the conference was well attended.

Interviews Virginia Official.--W. R. Dillon was in Richmond, Va., on November 28 and interviewed the executive secretary of the State Department of Game and Inland Fisheries, in connection with the enforcement of the game laws.

Confer with Game Wardens.--Officials of this Division attending the National Game Conference in New York City on December 5 and 6 conferred with Wardens P. S. Farnham and Albert Stadlmeir.

Warden Stadlmeir Reappointed.--The appointment of P. K. Hillard of Atlantic City, N. J., as United States game warden, was terminated effective November 30. Albert Stadlmeir, of Lackawanna, N. Y., formerly U. S. game warden for Massachusetts, Rhode Island, and Connecticut, has been reinstated to fill the vacancy, and assumed active duty on December 16 with headquarters at Atlantic City. His district includes the States of New Jersey (except the northern section within a radius of 25 miles of New York City), Delaware, and that portion of Pennsylvania southeast of the Blue Ridge Mountains.

Mallard Raises 13 Ducklings.--Warden M. A. Charlton reports that a mallard hen hatched her brood in a small stream running through the property of Deputy Warden O. H. Neimeyer, of Prospect, Ohio, this year and raised 13 ducklings. When they were several weeks old she took them to the Scioto River about a mile away. A few days before the hunting season opened she returned with 12 young ducks and all flew into a wire inclosure, partly in the creek, and have remained there ever since. The mother duck was raised by Mr. Neimeyer.

Deer Hit by Train.--Warden P. S. Farnham and a New York State game protector found a ten-point buck deer, weighing about 200 pounds, with both hind legs broken, near the Susquehanna River in the vicinity of Tofts Island, N. Y., on November 24. The deer evidently had been hit by a train. It was killed and given to the county farm.

Deputy Warden Killed.--U. S. Deputy Game Warden Frank E. Fagot, Jr., was shot and killed by a violator of the Louisiana State game laws while attempting to arrest the latter on November 29. Mr. Fagot was working in the capacity of State game warden at the time. The Survey extends sympathy to Mr. Fagot's family in their bereavement.

Stenographer Appointed.--Miss Martha M. Taylor was recently appointed stenographer on October 22, to fill the vacancy created by the transfer of Miss Frances Pierson to the War Department.

Illegal Traffic Case Settled.--Warden Ray C. Steele was recently concerned in the settlement of a case against a local concern in the State of Washington involving illegal traffic in beaver skins that netted the State a fine of \$1,500 and costs of \$12.50. The information on which this case was based was originally obtained by Warden Harry Barmeier in the examination of consignee records at St. Louis, Mo.

U. S. Wardens Cooperate with States.--The States have been obtaining excellent results based on information furnished them as a result of investigations by United States game wardens. Since July 1, 1927, no less than 245 State cases have been reported to the Bureau as being settled in State courts. The fines and costs assessed in these cases totaled \$10,673.25, and four cases have been reported in which jail sentences were imposed involving 15, 30, 60, and 90 days. All except the 60-day sentence were in lieu of fines and costs assessed in the cases.

State and Federal Seasons Harmonized in 44 States.--It is of interest to note that in 44 States the State seasons on migratory waterfowl, and in many instances other migratory game birds, have been made to conform substantially with the seasons provided by Federal regulations. Georgia and Missouri still have open seasons on waterfowl of approximately six and one-half months each, which are, of course, reduced to three and three and one-half months respectively, by the Federal regulations.

Violators Arrested.--Federal Game Warden George Tonkin, of Berkeley, Calif., encountered considerable difficulty in arresting two violators apprehended while hunting wild ducks after sunset in Solano County, Calif., on November 10, 1927. The violators directed their shotguns at the warden and ordered him to keep ten feet distant. The warden gradually closed in on one of the violators until he was in a position to make him drop his gun, after which a scuffle ensued. Two civilians came to Mr. Tonkin's assistance and both of the violators were arrested and afterwards arraigned before a U. S. commissioner on the charge of violating the migratory-bird treaty act. They were required to furnish bond in the amount of \$1,500 each.

Six Pay \$100 Fines.--Three offenders apprehended by Deputy Game Warden Creech killing wild ducks from a power boat on the Mississippi River near St. Louis on November 6, were arraigned in the Federal court at St. Louis the next day and required to pay fines of \$100 each. Three other cases involving similar violations were terminated in the Federal court in the State of Washington by fines of \$100 each. The latter cases were submitted by Federal Game Warden Ransom.

States Appreciate Survey's Cooperation.--The latest annual reports of the State game departments of Montana and Wyoming contain statements very commendatory of the cooperation that has been rendered by the Biological Survey in the protection of wild-life resources.

Cases Terminated -- Reports Received during November

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Beals**	1	Wisconsin	Hunting ducks after sunset	\$25
Blackwell*	1	Illinois	Selling ducks	\$25 and costs of \$20.35
"	1	"	Selling ducks	\$50 and \$56.44 costs
Bloxsom	1	Virginia	Trapping and selling ducks	\$100
Bloxsom, Bonniwell**	2	"	Hunting ducks in close season	\$25 each
Bloxsom, Nottingham**	1	"	Shooting at brant from a motor boat	\$5
Breaux**, Hunter**, Holland*	1	Louisiana	Killing doves in close season	\$10
Charlton, Holcomb*	1	Ohio	Possessing nongame birds	\$5 and costs of \$20.05
Creech*	3	Missouri	Killing ducks from a power boat	\$100 each
Estes*, Clarkson	1	Texas	Possessing meadowlarks	\$1
Holland*, Schreiber**, Wendel**	2	Louisiana	Possessing doves in close season	\$10 each
Linebaugh, Williams**, Finley**	1	Tennessee	Possessing insectivorous and nongame birds	\$25
Ransom	1	Washington	Killing ducks from a motor boat	\$100
Ransom, Hill**	1	Montana	Possessing ducks in storage in close season	\$10
" "	1	"	Possessing ducks in close season	\$8
Ransom, Moore*	2	Washington	Killing ducks from a motor boat	\$100 each
Riddick	1	Arkansas	Killing ducks in close season	\$10
"	1	"	Killing ducks in close season	\$25
Roahen	1	Illinois	Possessing ducks in close season	\$15 and costs of \$23.15
"	1	"	Possessing ducks in storage in close season	\$15 & costs of \$20.15
"	3	"	Hunting ducks after sunset	\$15 & costs of \$16.82 each
"	1	"	Killing a coot in close season	\$25 & costs of \$20.25
"	2	"	Hunting ducks in close season	\$15 & costs of \$17.65 each
"	1	"	Hunting ducks in close season	\$15 & costs of \$20.15
"	1	"	Hunting ducks in close season	\$25 & costs of \$18.13
Smith, Mushbach, Whitehead	1	Georgia	Possessing doves and snipe in close season	\$10
Steele, O.D.	1	Iowa	Hunting snipe after sunset	\$5
Whitehead	1	Georgia	Possessing a loon	\$1
Whitehead, Berley**	2	South Carolina	Possessing wood ducks	\$15 each
Whitehead, King*	1	Georgia	Selling ducks	\$15

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State:</u>	<u>Violation</u>
Barmeier, Ferrier*, Heller*	1	Missouri	Killing ducks from a motor boat
Birsch, Bonner*	1	North Carolina	Hunting ducks from a motor boat
Blackwell*	1	Illinois	Killing grebes, and from a motor boat
"	3	"	Possessing grebes
Bloxson, Nottingham**	1	Virginia	Shooting at brant from a motor boat
Carlock*	1	Illinois	Possessing a wood duck
Charlton, Buchanan**, Kendall**, Long**, Roth**	2	Indiana	Killing ducks from a motor boat
Clarkson	1	Texas	Possessing doves in close season
"	1	"	Killing a meadowlark
Creech*	3	Missouri	Killing ducks from a power boat
Fidler*	2	Illinois	Possessing wood ducks
Gieseler*	1	"	Hunting grebes
"	1	"	Possessing a robin
"	1	"	Hunting coot from a motor boat
Goodwin*	2	Massachusetts	Killing yellowlegs
Hilliard, Pierce*	4	New Jersey	Hunting ducks after sunset
Ransom	1	Washington	Killing ducks from a motor boat
Ransom, Moore*	2	"	Killing ducks from a motor boat
Riddick, Thomason**	10	Arkansas	Killing ducks after sunset
Roahen	4	Illinois	Hunting coots from a motor boat
"	1	"	Possessing a wood duck
Scholler*, Jans*	1	"	Possessing a woodpecker
" "	1	"	Possessing a bittern
" "	2	"	Possessing a robin
Scholler*, Petersen*	1	"	Possessing grebes
Smith	2	Maine	Possessing eider ducks
"	1	Massachusetts	Possessing an eider duck
Tonkin	2	California	Hunting ducks after sunset
Whitehead	1	Georgia	Killing a robin
"	1	"	Killing doves in close season
"	2	"	Killing doves in close season
"	2	"	Hunting doves in close season
"	2	"	Possessing herons
Whitehead, Kidder**	1	Florida	Killing ducks in excess of bag limit (Brice)
Whitehead, King*	1	Georgia	Killing a flicker

* U. S. Deputy Game Warden

** Deputy State Game Warden

#####



